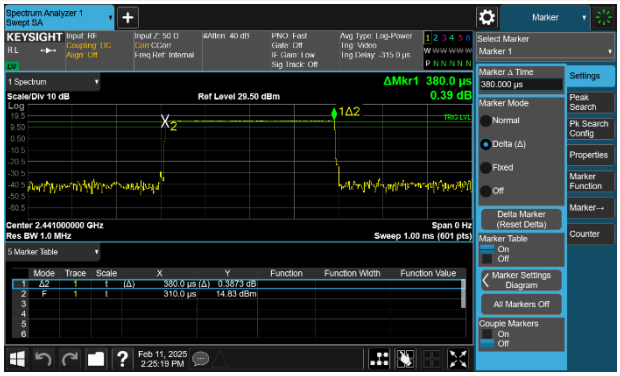
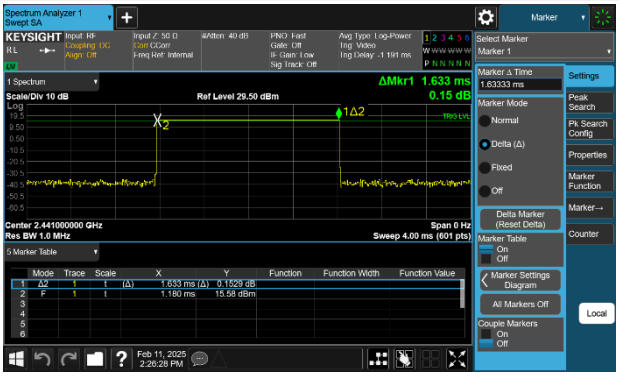
Test Plots

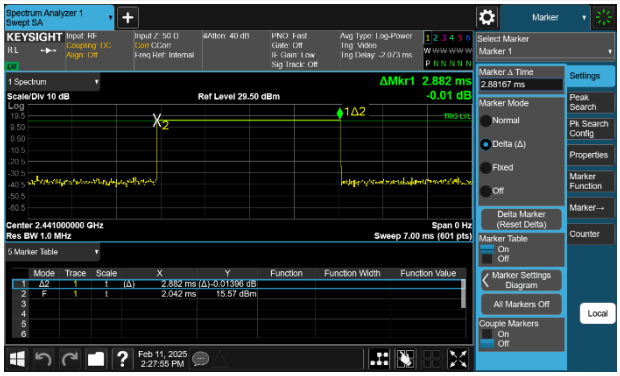
GFSK DH1



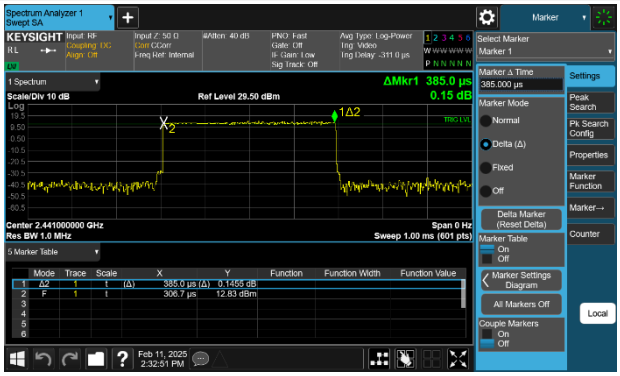
GFSK DH3



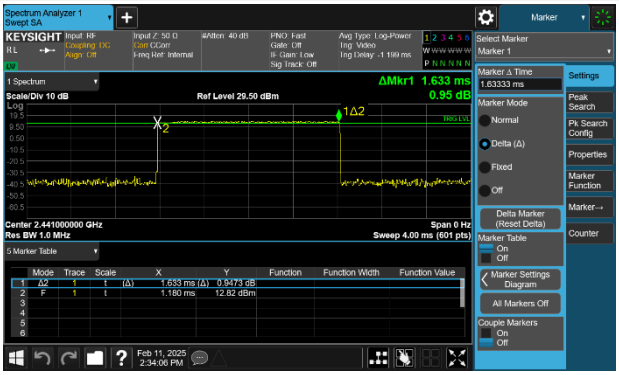
GFSK DH5



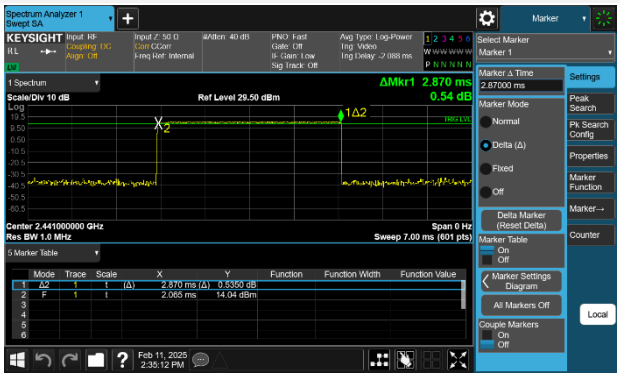
8-DPSK DH1



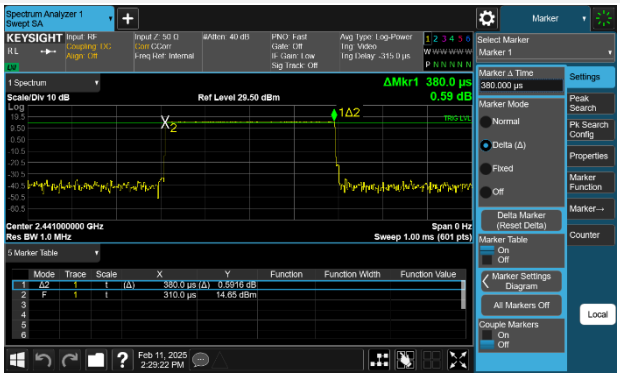
8-DPSK DH3



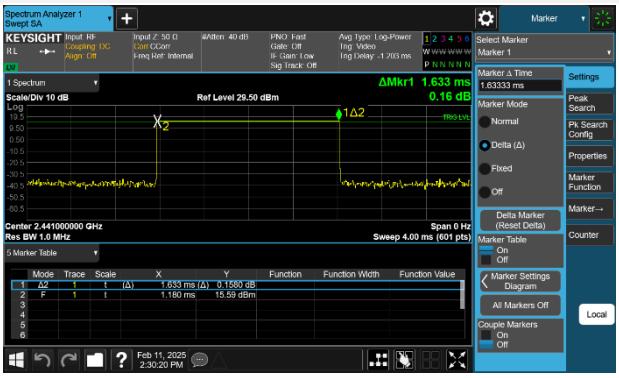
8-DPSK DH5



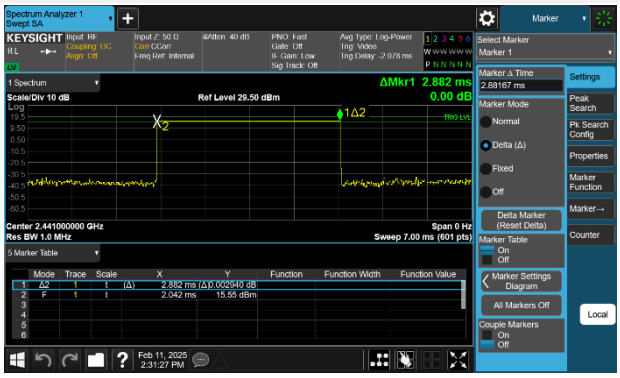
AFH Mode DH1



AFH Mode DH3



AFH Mode DH5



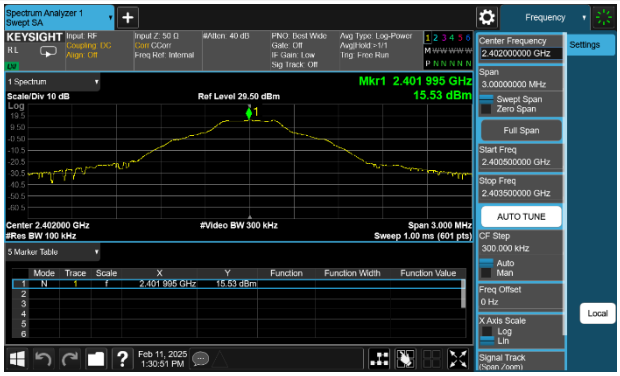
A.6 Conducted Spurious Emissions & Authorized-band band-edge

Test Data

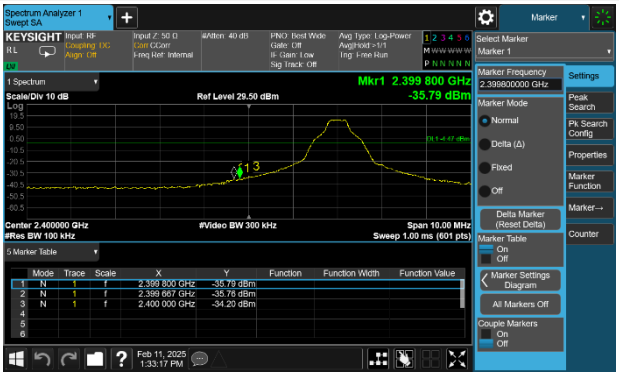
GFSK				
Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low	-36.24	15.53	-4.47	Pass
Middle	-36.29	15.29	-4.71	Pass
High	-35.99	14.13	-5.87	Pass
8-DPSK				
Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low	-35.84	14.03	-5.97	Pass
Middle	-36.00	14.00	-6.00	Pass
High	-36.65	12.64	-7.36	Pass
Hopping Mode				
Mode	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
GFSK	-35.94	16.24	-3.76	Pass
8-DPSK	-36.24	13.43	-6.57	Pass

Test Plots

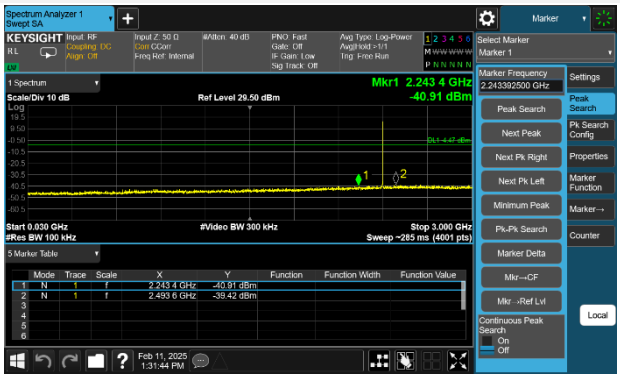
GFSK LOW CHANNEL, CARRIER LEVEL



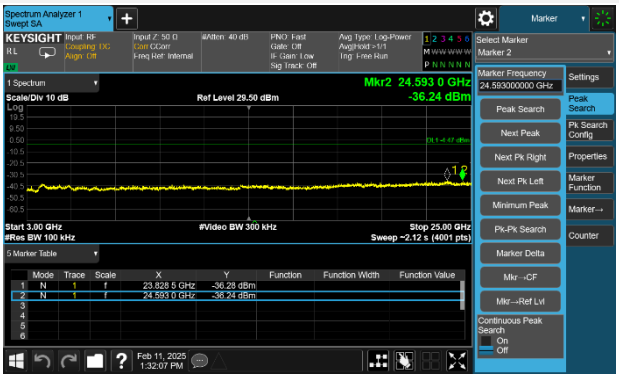
GFSK LOW CHANNEL, BAND EDGE



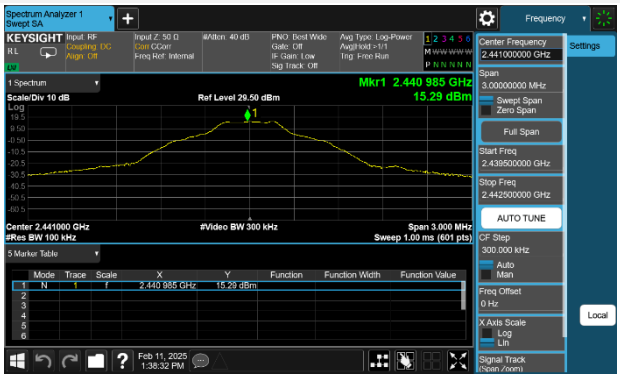
GFSK LOW CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



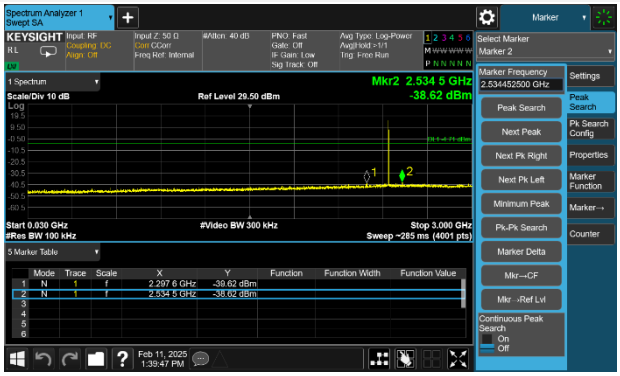
GFSK LOW CHANNEL, SPURIOUS 3 GHz ~ 25 GHz



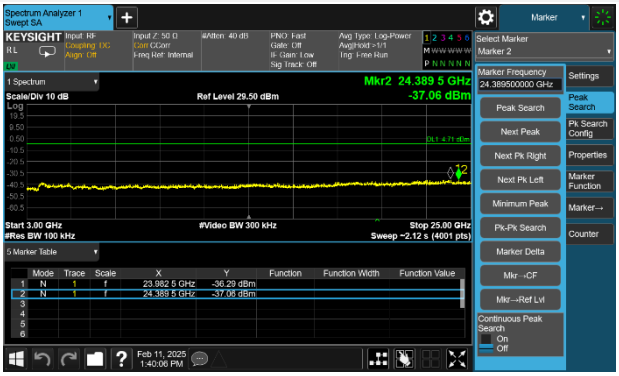
GFSK MIDDLE CHANNEL, CARRIER LEVEL



GFSK MIDDLE CHANNEL, SPURIOUS
30 MHz ~ 3 GHz

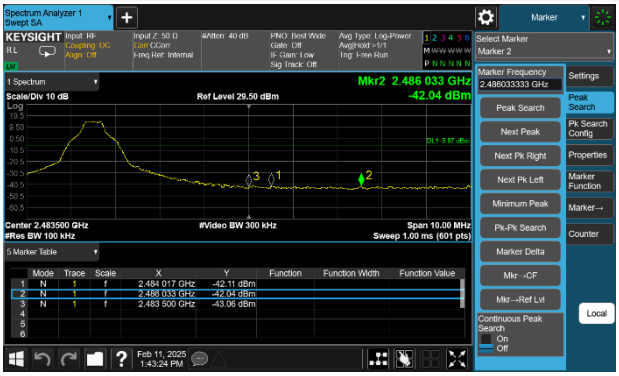


GFSK MIDDLE CHANNEL, SPURIOUS
3 GHz ~ 25 GHz

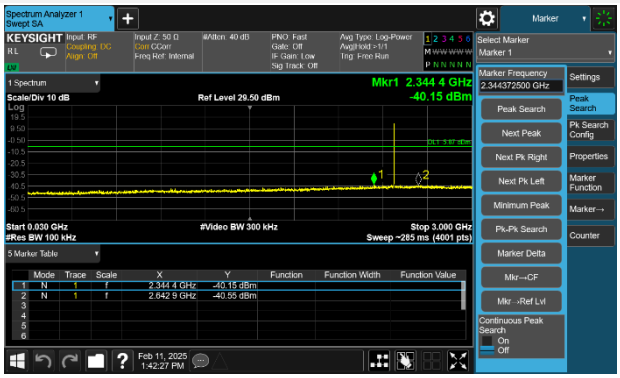


GFSK HIGH CHANNEL, CARRIER LEVEL

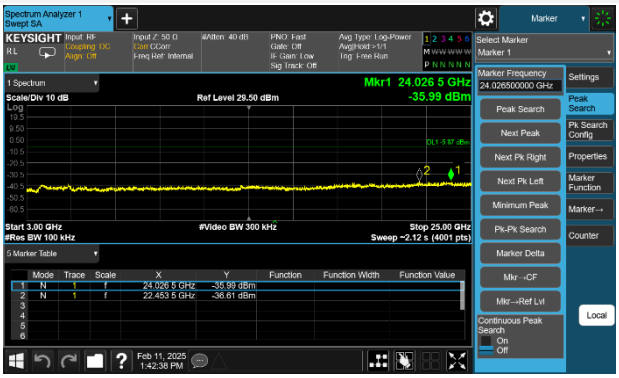
GFSK HIGH CHANNEL, BAND EDGE



GFSK HIGH CHANNEL, SPURIOUS
30 MHz ~ 3 GHz

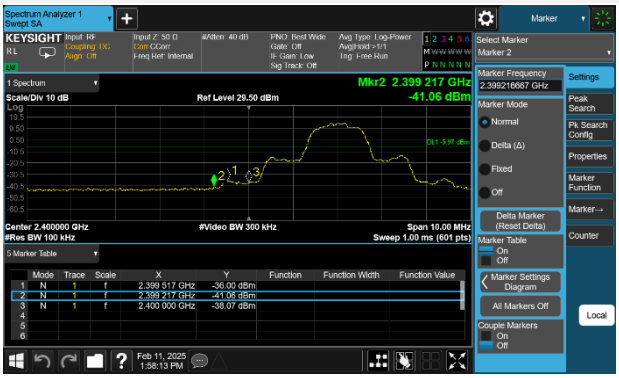


GFSK HIGH CHANNEL, SPURIOUS
3 GHz ~ 25 GHz

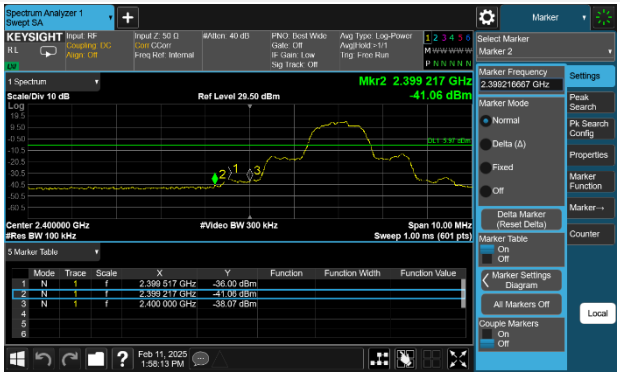


8-DPSK LOW CHANNEL, CARRIER LEVEL

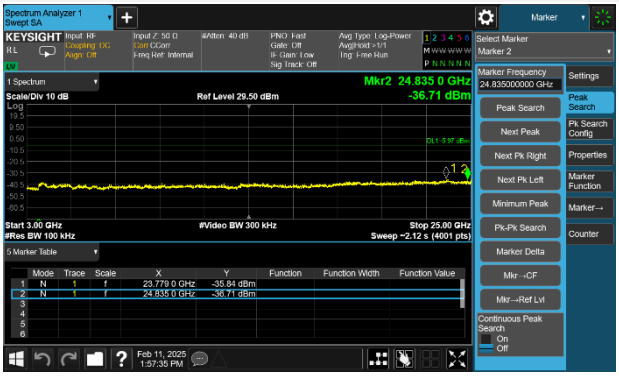
8-DPSK LOW CHANNEL, BAND EDGE



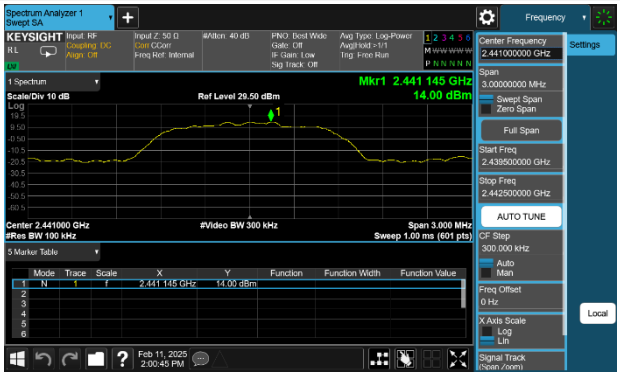
8-DPSK LOW CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



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

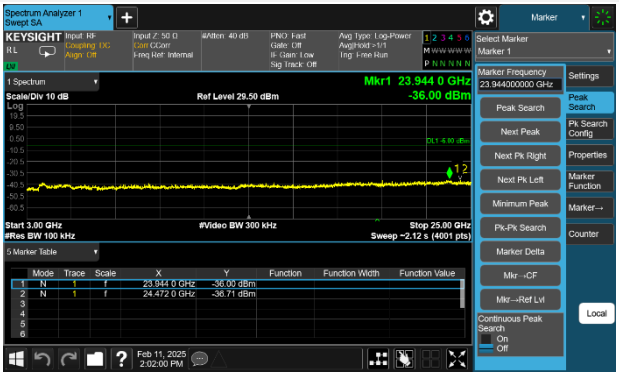


8-DPSK MIDDLE CHANNEL, CARRIER LEVEL

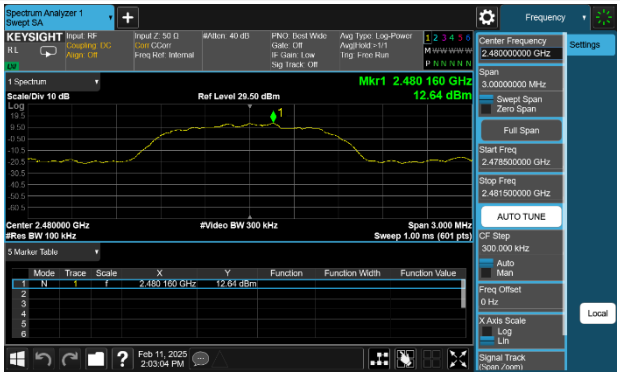


8-DPSK MIDDLE CHANNEL, SPURIOUS
30 MHz ~ 3 GHz

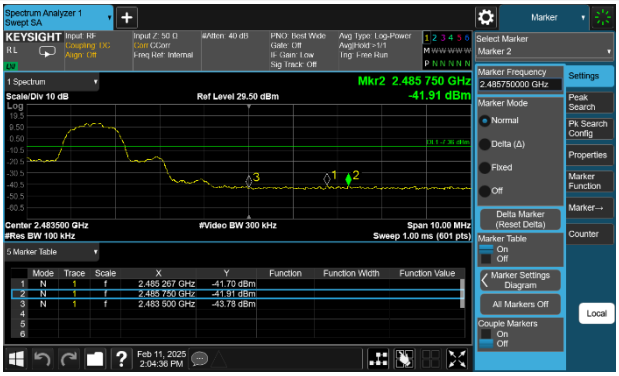
8-DPSK MIDDLE CHANNEL, SPURIOUS
3 GHz ~ 25 GHz



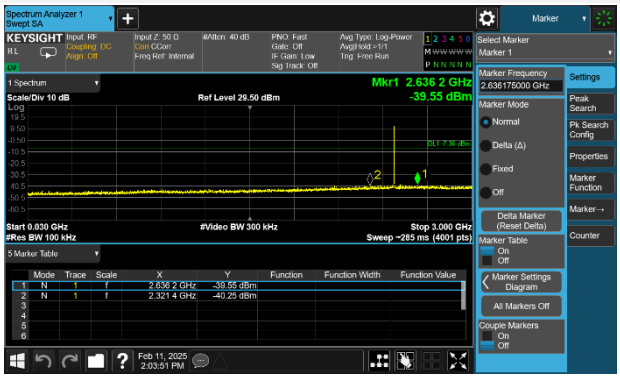
8-DPSK HIGH CHANNEL, CARRIER LEVEL



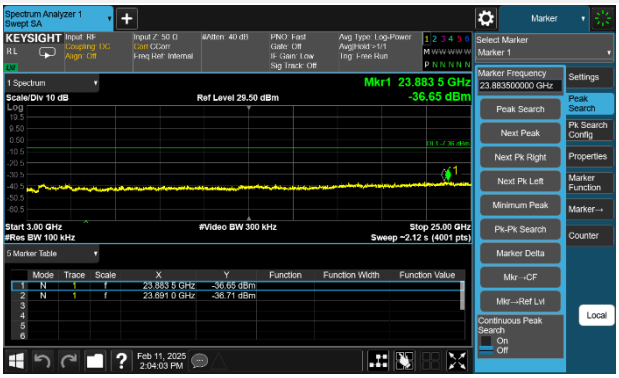
8-DPSK HIGH CHANNEL, BAND EDGE



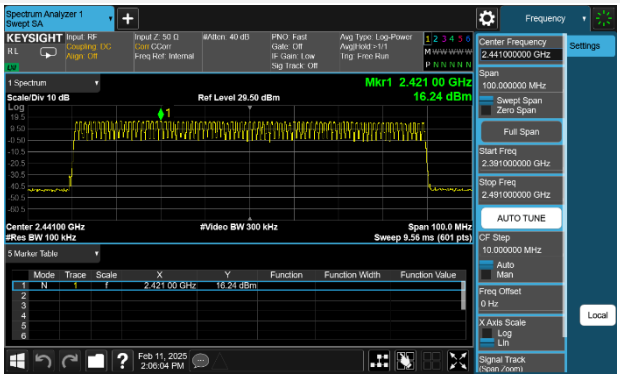
8-DPSK HIGH CHANNEL, SPURIOUS
30 MHz ~ 3 GHz



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



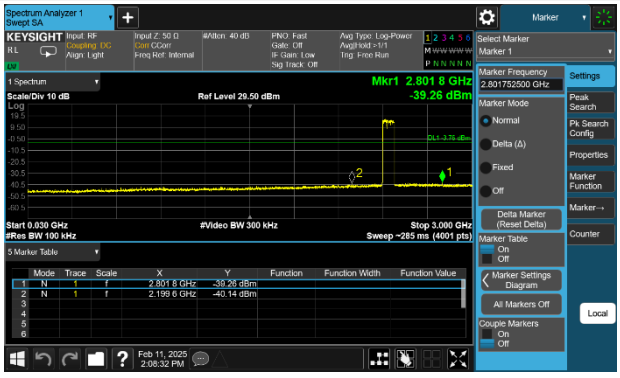
GFSK HOPPING, CARRIER LEVEL



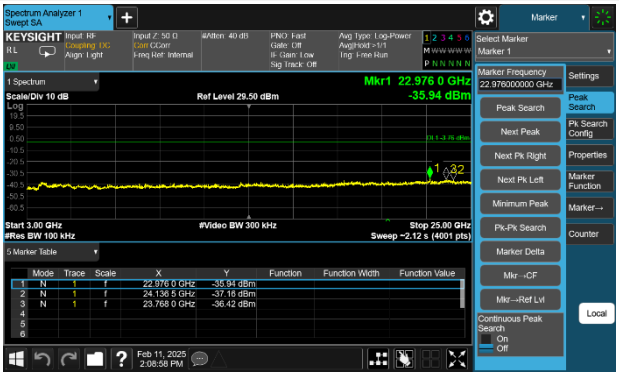
GFSK HOPPING BAND EDGE (LOW)

GFSK HOPPING BAND EDGE (HIGH)

GFSK Hopping Mode, SPURIOUS
30 MHz ~ 3 GHz



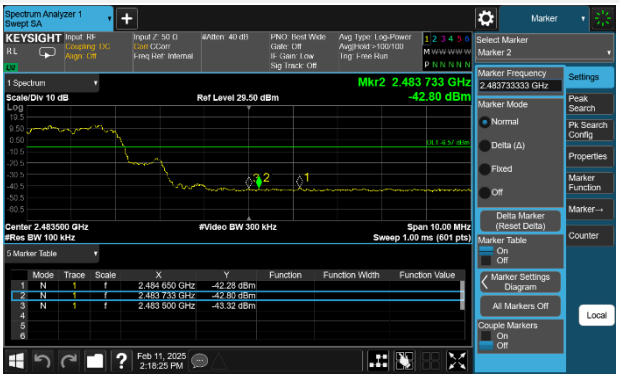
GFSK Hopping Mode, SPURIOUS
3GHz ~ 25 GHz



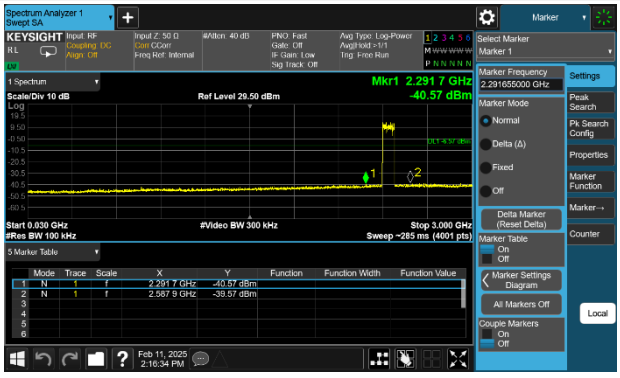
8-DPSK HOPPING, CARRIER LEVEL

8-DPSK Hopping BAND EDGE (LOW)

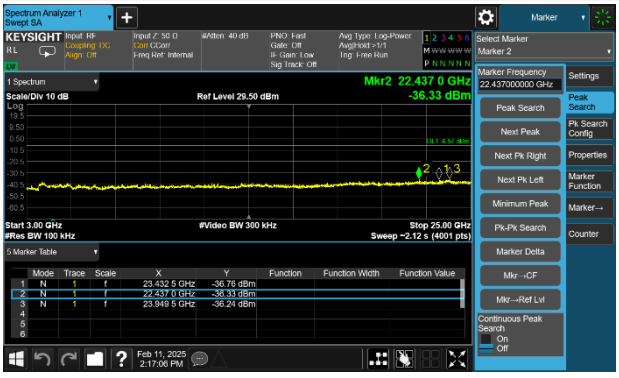
8-DPSK Hopping BAND EDGE (HIGH)



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



8-DPSK Hopping Mode, SPURIOUS
3GHz ~ 25 GHz



A.7 Conducted Emission

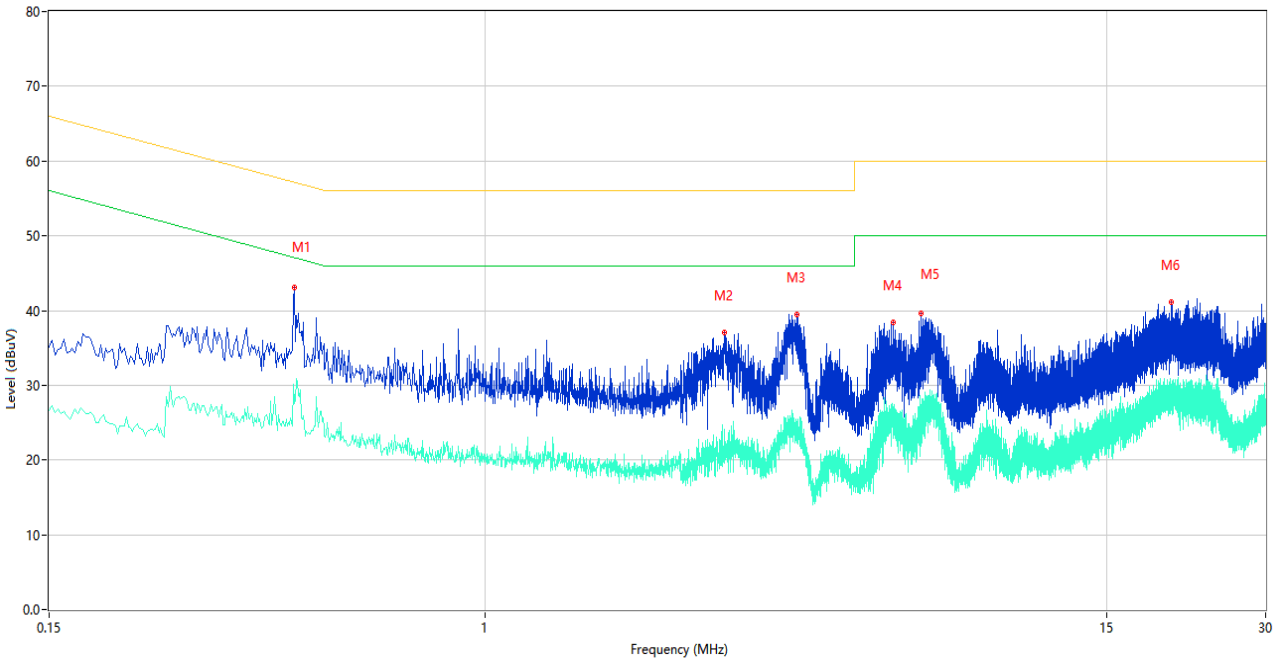
Note 1: The EUT is working in the Normal link mode. All modes have been tested and normal link mode is worst.

Note 2: Devices subject to Part 15 must be tested for all available U.S. voltages and frequencies (such as a nominal 120 VAC, 60 Hz and 240 VAC, 50 Hz) for which the device is capable of operation. So, The configuration 120 VAC, 60 Hz and 240 VAC, 50 Hz were tested respectively, but only the worst configuration (120 VAC, 60 Hz) shown here.

Note 3: Results (dBuV) = Original reading level of Spectrum Analyzer (dBuV) + Factor (dB)

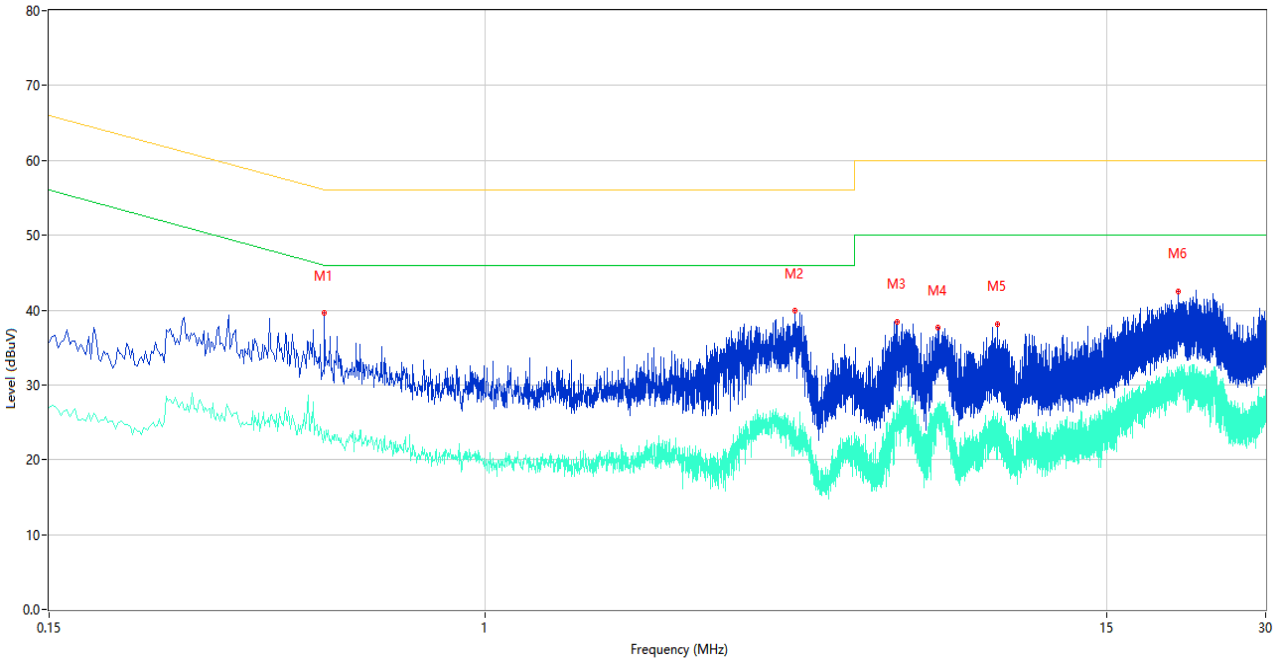
Test Data and Plots

PHASE L



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.436	43.02	10.57	57.14	14.12	Peak	L	Pass
1**	0.436	27.52	10.57	47.14	19.62	AV	L	Pass
2	2.842	37.05	10.67	56.00	18.95	Peak	L	Pass
2**	2.842	21.70	10.67	46.00	24.30	AV	L	Pass
3	3.892	39.46	10.69	56.00	16.54	Peak	L	Pass
3**	3.892	25.05	10.69	46.00	20.95	AV	L	Pass
4	5.916	38.45	11.42	60.00	21.55	Peak	L	Pass
4**	5.916	24.47	11.42	50.00	25.53	AV	L	Pass
5	6.694	39.58	11.56	60.00	20.42	Peak	L	Pass
5**	6.694	25.20	11.56	50.00	24.80	AV	L	Pass
6	19.886	41.09	15.14	60.00	18.91	Peak	L	Pass
6**	19.886	29.62	15.14	50.00	20.38	AV	L	Pass

PHASE N



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.498	39.59	10.32	56.03	16.44	Peak	N	Pass
1**	0.498	23.83	10.32	46.03	22.20	AV	N	Pass
2	3.860	39.93	10.75	56.00	16.07	Peak	N	Pass
2**	3.860	23.92	10.75	46.00	22.08	AV	N	Pass
3	6.026	38.47	11.26	60.00	21.53	Peak	N	Pass
3**	6.026	27.84	11.26	50.00	22.16	AV	N	Pass
4	7.214	37.69	11.50	60.00	22.31	Peak	N	Pass
4**	7.214	25.25	11.50	50.00	24.75	AV	N	Pass
5	9.332	38.17	11.80	60.00	21.83	Peak	N	Pass
5**	9.332	24.21	11.80	50.00	25.79	AV	N	Pass
6	20.520	42.55	15.19	60.00	17.45	Peak	N	Pass
6**	20.520	30.64	15.19	50.00	19.36	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 C63.10-2013, 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.

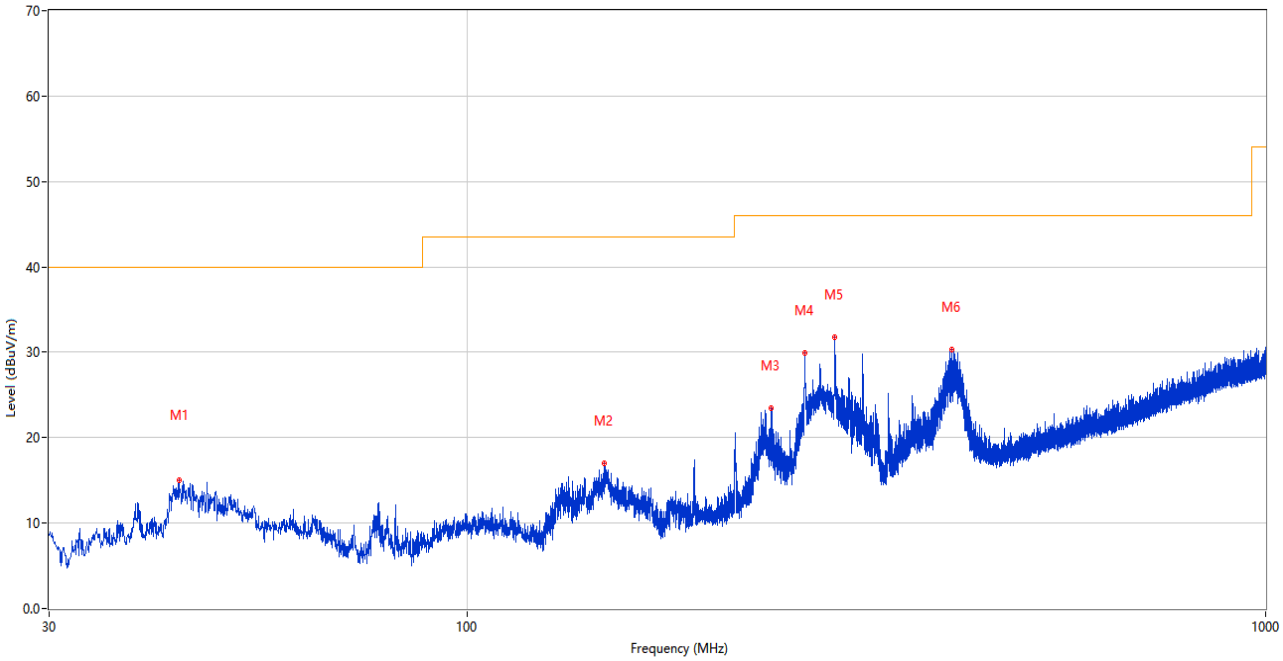
Note 3: The EUT is working in the Normal link mode below 1 GHz. All modes have been tested and DH5-Low mode is the worst.

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.

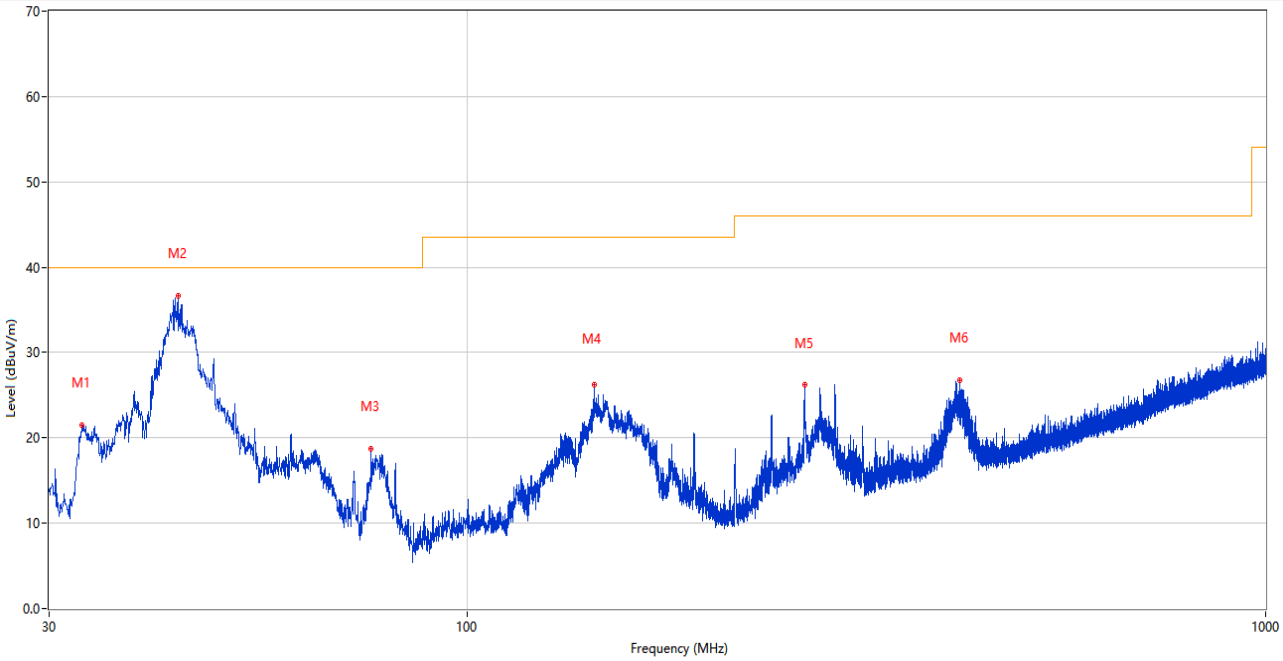
Test Data and Plots

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	43.629	14.97	-25.18	40.0	25.03	Peak	58.00	100	Horizontal	Pass
2	148.728	17.00	-30.13	43.5	26.50	Peak	221.00	200	Horizontal	Pass
3	240.684	23.43	-25.27	46.0	22.57	Peak	82.00	200	Horizontal	Pass
4	264.837	29.97	-24.61	46.0	16.03	Peak	61.00	100	Horizontal	Pass
5	288.845	31.74	-23.80	46.0	14.26	Peak	80.00	100	Horizontal	Pass
6	405.147	30.36	-20.88	46.0	15.64	Peak	237.00	100	Horizontal	Pass

30 MHz to 1 GHz, ANT V

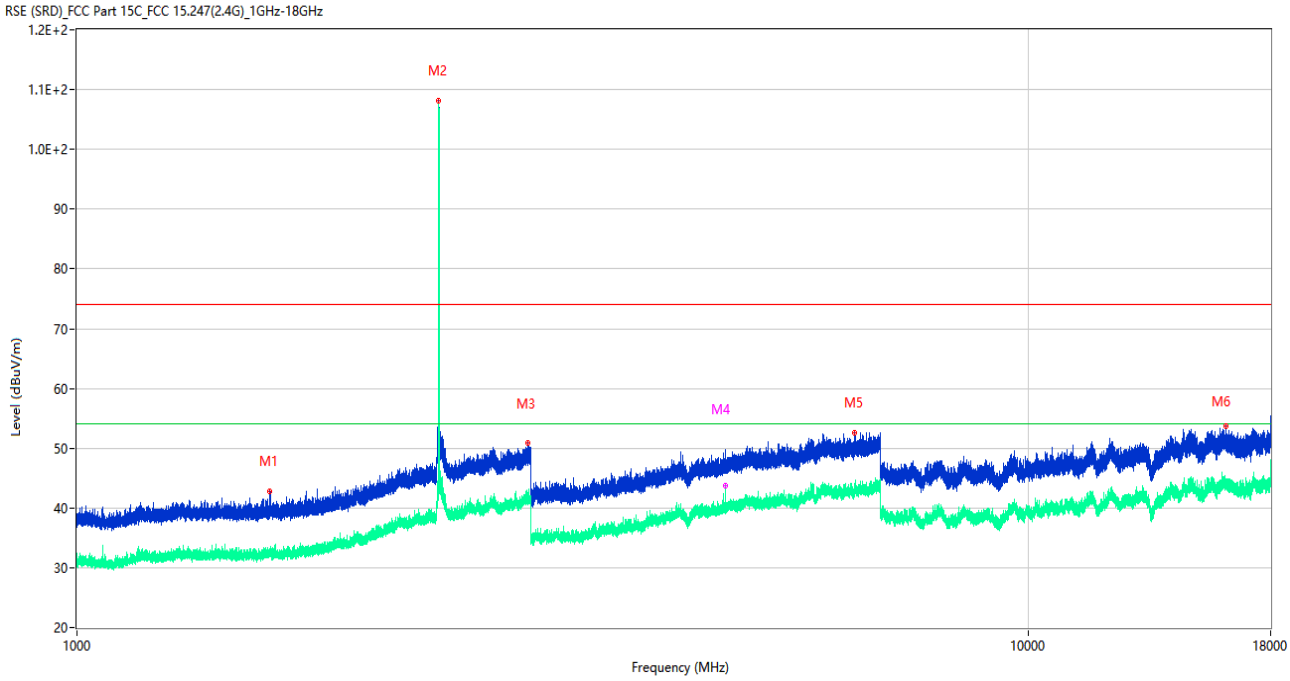


No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	32.959	21.44	-29.34	40.0	18.56	Peak	123.00	100	Vertical	Pass
2	43.532	36.60	-25.22	40.0	3.40	Peak	102.00	100	Vertical	Pass
3	75.929	18.77	-31.02	40.0	21.23	Peak	102.00	100	Vertical	Pass
4	144.460	26.19	-30.55	43.5	17.31	Peak	0.00	100	Vertical	Pass
5	264.837	26.17	-24.61	46.0	19.83	Peak	51.00	100	Vertical	Pass
6	414.023	26.72	-20.57	46.0	19.28	Peak	102.00	100	Vertical	Pass

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

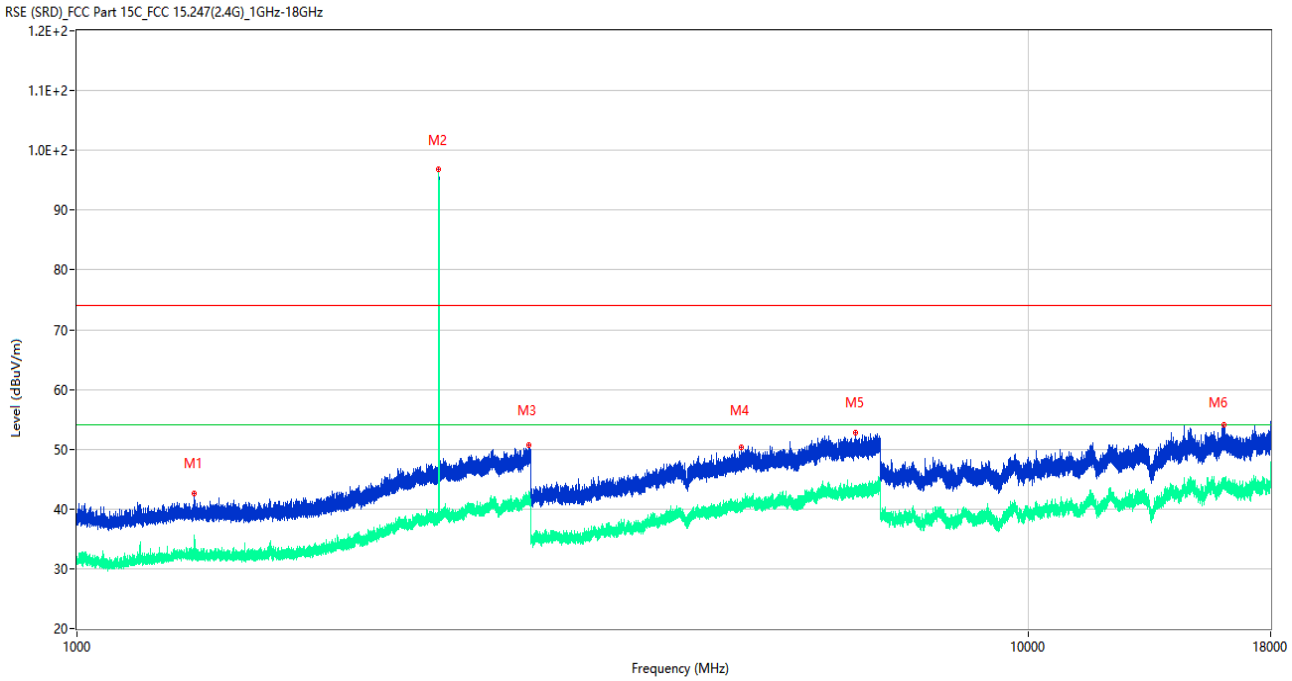
Note 2: The spurious from 18GHz-25GHz is noise only, do not show on the report.

GFSK LOW CHANNEL 1 GHz to 18 GHz, ANT H



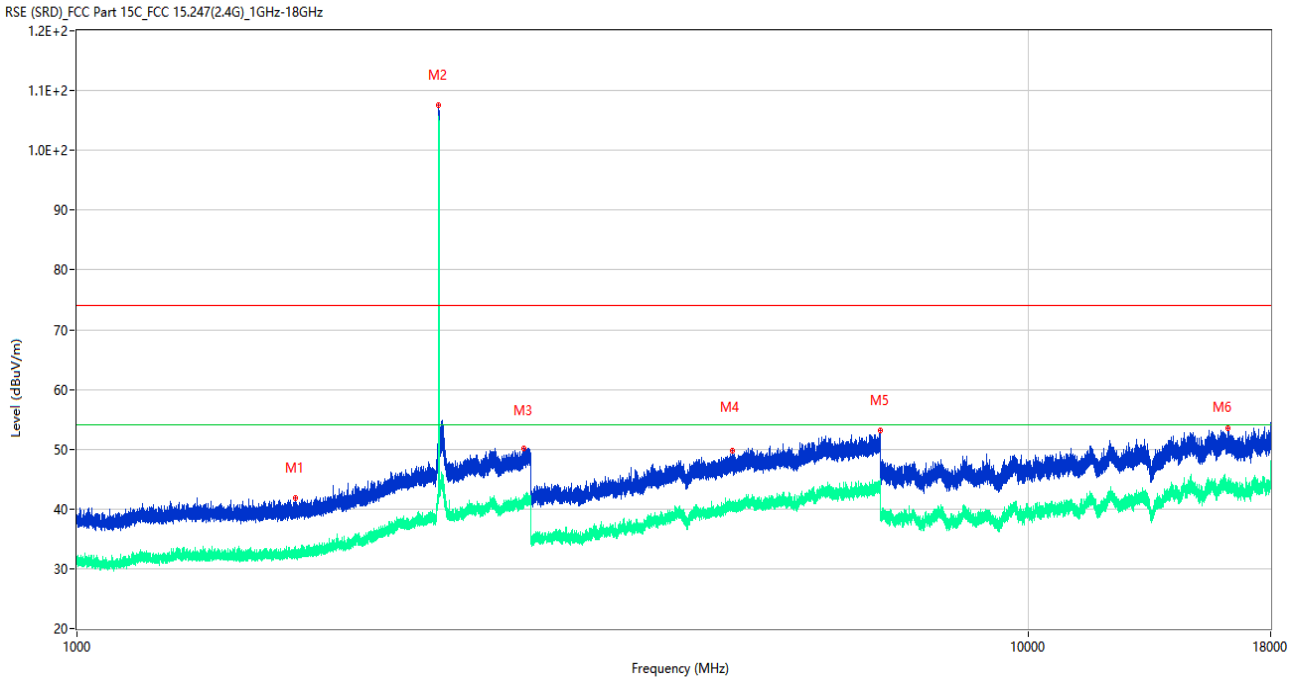
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1593.400	42.83	-17.72	74.0	31.17	Peak	267.00	200	Horizontal	Pass
1**	1593.400	32.78	-17.72	54.0	21.22	AV	267.00	200	Horizontal	Pass
2	2402.100	108.19	-13.32	74.0	-34.19	Peak	112.00	150	Horizontal	N/A
2**	2402.100	108.00	-13.32	54.0	-54.00	AV	112.00	150	Horizontal	N/A
3	2977.200	50.90	-10.23	74.0	23.10	Peak	340.00	100	Horizontal	Pass
3**	2977.200	41.86	-10.23	54.0	12.14	AV	340.00	100	Horizontal	Pass
4	4804.000	47.76	-3.55	74.0	26.24	Peak	96.00	150	Horizontal	Pass
4**	4804.000	43.67	-3.55	54.0	10.33	AV	96.00	150	Horizontal	Pass
5	6573.600	52.63	-1.30	74.0	21.37	Peak	225.00	200	Horizontal	Pass
5**	6573.600	42.80	-1.30	54.0	11.20	AV	225.00	200	Horizontal	Pass
6	16140.188	53.68	5.35	74.0	20.32	Peak	194.00	100	Horizontal	Pass
6**	16140.188	43.36	5.35	54.0	10.64	AV	194.00	100	Horizontal	Pass

GFSK LOW CHANNEL 1 GHz to 18 GHz, ANT V



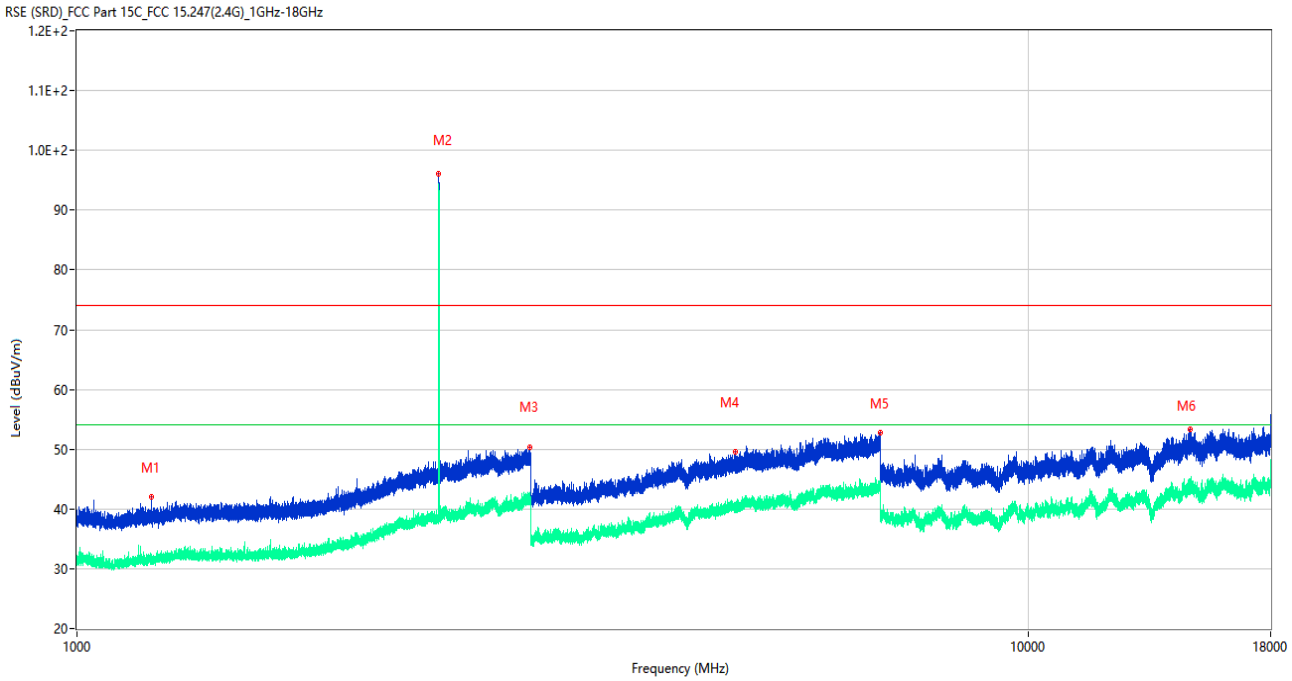
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1327.100	42.67	-17.46	74.0	31.33	Peak	279.00	100	Vertical	Pass
1**	1327.100	32.20	-17.46	54.0	21.80	AV	279.00	100	Vertical	Pass
2	2402.100	96.76	-13.32	74.0	-22.76	Peak	218.00	150	Vertical	N/A
2**	2402.100	96.41	-13.32	54.0	-42.41	AV	218.00	150	Vertical	N/A
3	2987.500	50.76	-10.00	74.0	23.24	Peak	152.00	200	Vertical	Pass
3**	2987.500	41.64	-10.00	54.0	12.36	AV	152.00	200	Vertical	Pass
4	4994.400	50.25	-3.35	74.0	23.75	Peak	120.00	300	Vertical	Pass
4**	4994.400	39.95	-3.35	54.0	14.05	AV	120.00	300	Vertical	Pass
5	6586.400	52.78	-0.96	74.0	21.22	Peak	184.00	100	Vertical	Pass
5**	6586.400	42.66	-0.96	54.0	11.34	AV	184.00	100	Vertical	Pass
6	16073.513	54.01	5.42	74.0	19.99	Peak	315.00	200	Vertical	Pass
6**	16073.513	44.11	5.42	54.0	9.89	AV	315.00	200	Vertical	Pass

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



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1698.700	41.91	-17.36	74.0	32.09	Peak	65.00	400	Horizontal	Pass
1**	1698.700	32.36	-17.36	54.0	21.64	AV	65.00	400	Horizontal	Pass
2	2401.800	107.65	-13.35	74.0	-33.65	Peak	112.00	100	Horizontal	N/A
2**	2401.800	105.09	-13.35	54.0	-51.09	AV	112.00	100	Horizontal	N/A
3	2948.200	50.21	-10.21	74.0	23.79	Peak	220.00	100	Horizontal	Pass
3**	2948.200	42.22	-10.21	54.0	11.78	AV	220.00	100	Horizontal	Pass
4	4894.800	49.69	-3.55	74.0	24.31	Peak	360.00	400	Horizontal	Pass
4**	4894.800	40.67	-3.55	54.0	13.33	AV	360.00	400	Horizontal	Pass
5	6992.600	53.18	-0.33	74.0	20.82	Peak	313.00	300	Horizontal	Pass
5**	6992.600	43.72	-0.33	54.0	10.28	AV	313.00	300	Horizontal	Pass
6	16249.125	53.47	5.54	74.0	20.53	Peak	12.00	100	Horizontal	Pass
6**	16249.125	43.41	5.54	54.0	10.59	AV	12.00	100	Horizontal	Pass

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



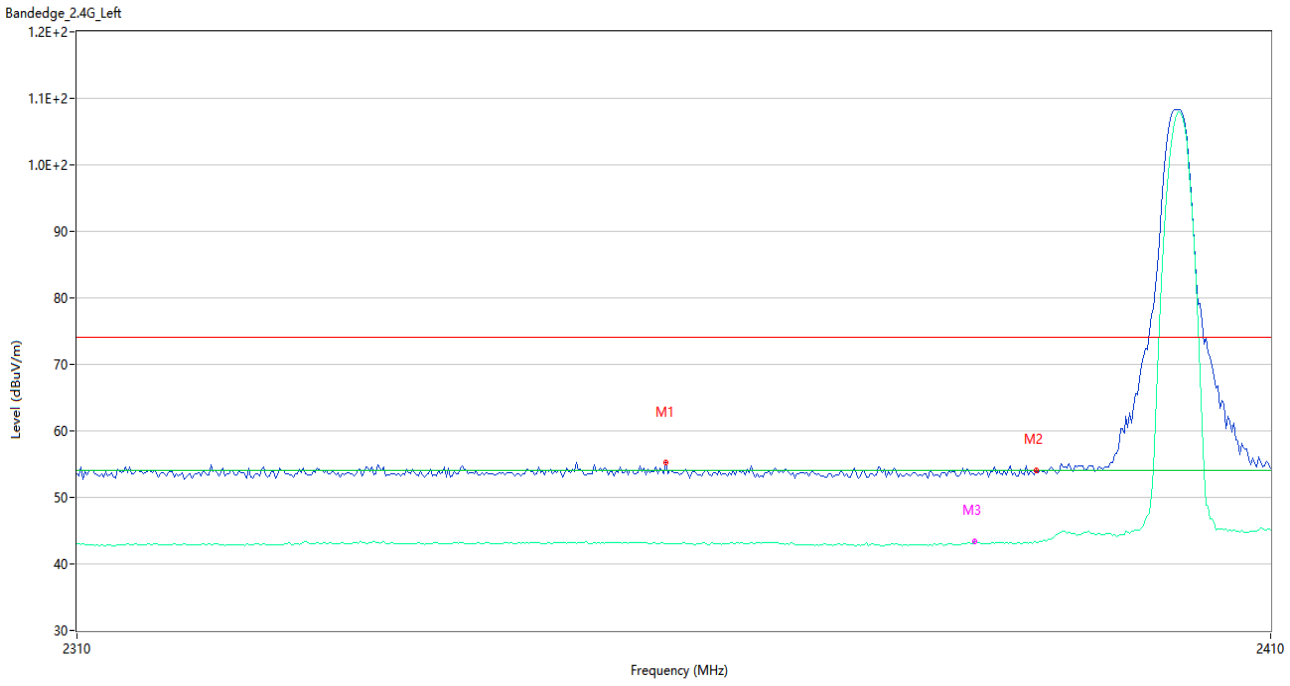
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1198.100	41.99	-17.92	74.0	32.01	Peak	328.00	150	Vertical	Pass
1**	1198.100	32.36	-17.92	54.0	21.64	AV	328.00	150	Vertical	Pass
2	2401.900	96.07	-13.34	74.0	-22.07	Peak	214.00	150	Vertical	N/A
2**	2401.900	93.32	-13.34	54.0	-39.32	AV	214.00	150	Vertical	N/A
3	2990.500	50.29	-10.01	74.0	23.71	Peak	140.00	200	Vertical	Pass
3**	2990.500	41.11	-10.01	54.0	12.89	AV	140.00	200	Vertical	Pass
4	4930.000	49.63	-3.66	74.0	24.37	Peak	129.00	100	Vertical	Pass
4**	4930.000	40.99	-3.66	54.0	13.01	AV	129.00	100	Vertical	Pass
5	6993.200	52.75	-0.32	74.0	21.25	Peak	192.00	100	Vertical	Pass
5**	6993.200	43.93	-0.32	54.0	10.07	AV	192.00	100	Vertical	Pass
6	14828.474	53.30	4.83	74.0	20.70	Peak	207.00	300	Vertical	Pass
6**	14828.474	44.33	4.83	54.0	9.67	AV	207.00	300	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 C63.10-2013, 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.

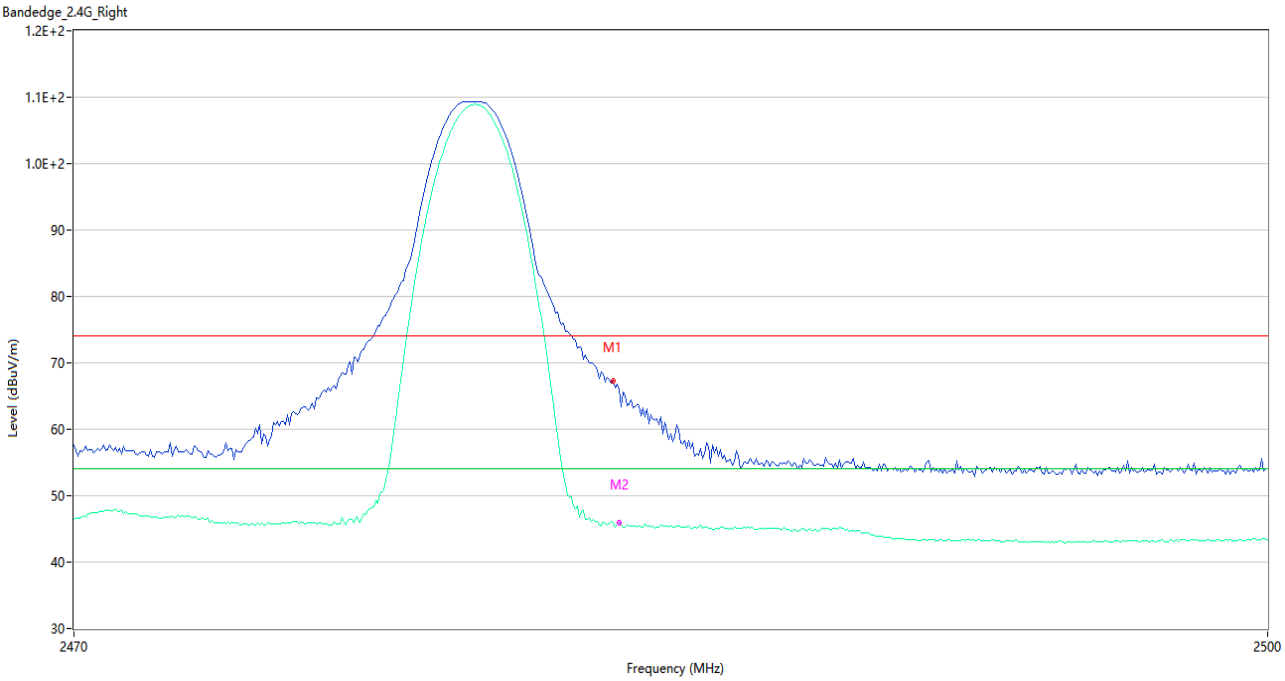
Test Data and Plots

GFSK LOW CHANNEL



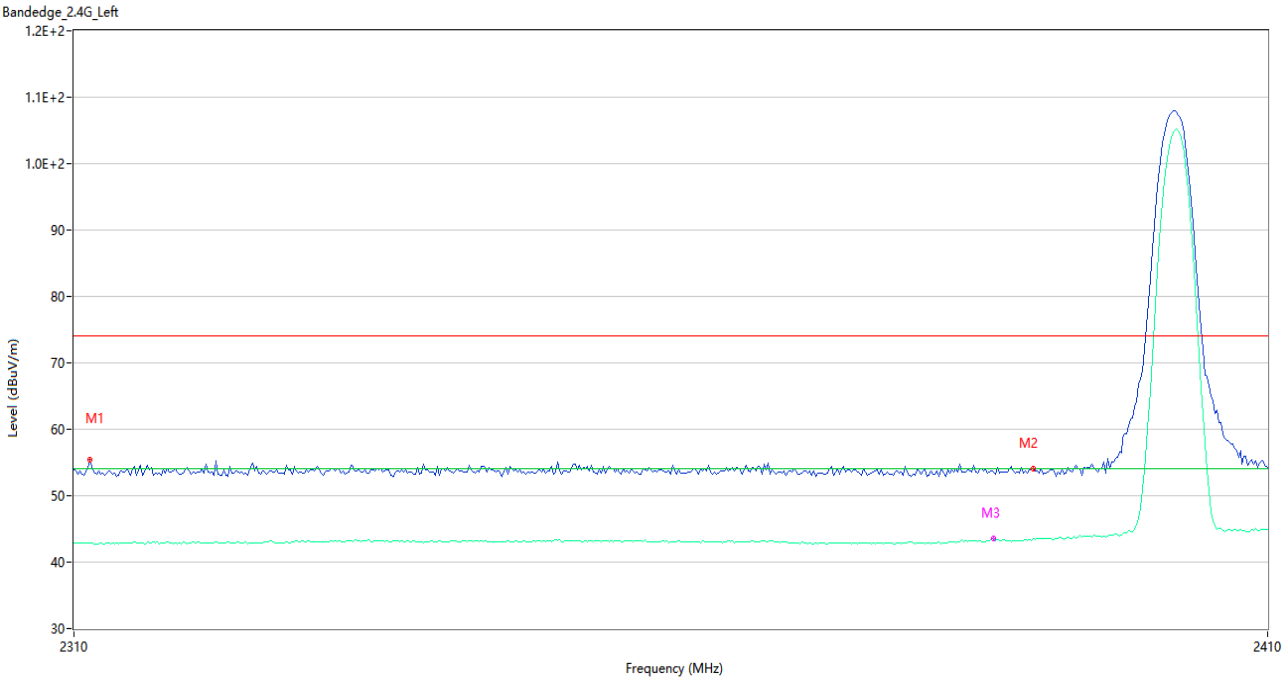
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2358.833	55.32	-0.67	74.0	18.68	Peak	337.00	200	Horizontal	Pass
1**	2358.833	43.00	-0.67	54.0	11.00	AV	337.00	200	Horizontal	Pass
2	2390.000	54.09	-1.15	74.0	19.91	Peak	269.00	200	Horizontal	Pass
2**	2390.000	43.20	-1.15	54.0	10.80	AV	269.00	200	Horizontal	Pass
3	2384.833	53.32	-1.03	74.0	20.68	Peak	295.00	200	Horizontal	Pass
3**	2384.833	43.31	-1.03	54.0	10.69	AV	295.00	200	Horizontal	Pass

GFSK HIGH CHANNEL



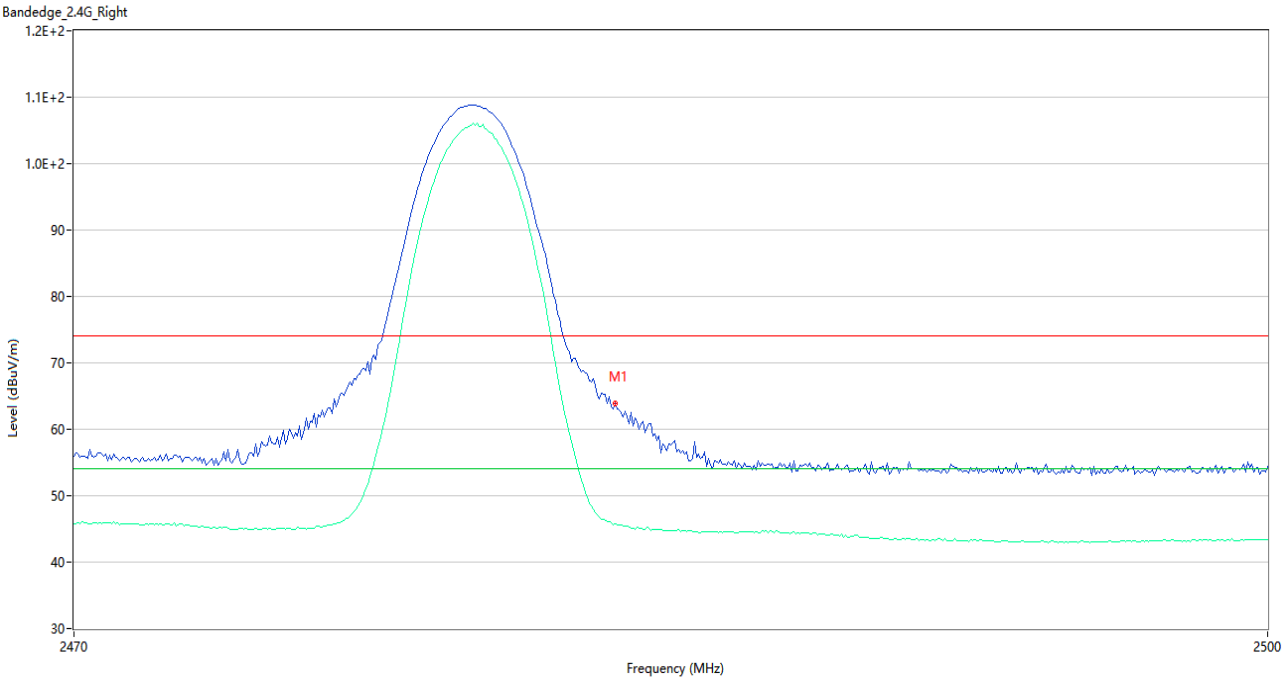
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2483.500	67.32	-0.51	74.0	6.68	Peak	127.00	400	Horizontal	Pass
1**	2483.500	45.92	-0.51	54.0	8.08	AV	127.00	400	Horizontal	Pass
2	2483.650	66.09	-0.51	74.0	7.91	Peak	106.00	150	Horizontal	Pass
2**	2483.650	46.00	-0.51	54.0	8.00	AV	106.00	150	Horizontal	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	2311.333	55.50	-1.00	74.0	18.50	Peak	66.00	100	Horizontal	Pass
1**	2311.333	42.93	-1.00	54.0	11.07	AV	66.00	100	Horizontal	Pass
2	2390.000	54.07	-1.15	74.0	19.93	Peak	11.00	200	Horizontal	Pass
2**	2390.000	43.50	-1.15	54.0	10.50	AV	11.00	200	Horizontal	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	2483.550	63.89	-0.51	74.0	10.11	Peak	137.00	200	Horizontal	Pass
1**	2483.550	45.68	-0.51	54.0	8.32	AV	137.00	200	Horizontal	Pass

ANNEX B TEST SETUP PHOTOS

Please refer the document “BL-SZ24A0252-AR-1.PDF”.

ANNEX C EUT EXTERNAL PHOTOS

Please refer the document “BL-SZ24A0252-AW.PDF”.

ANNEX D EUT INTERNAL PHOTOS

Please refer the document “BL-SZ24A0252-AI.PDF”.

Statement

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6. Any objection shall be raised to the Testing Center within 30 days after receiving the report.

--END OF REPORT--