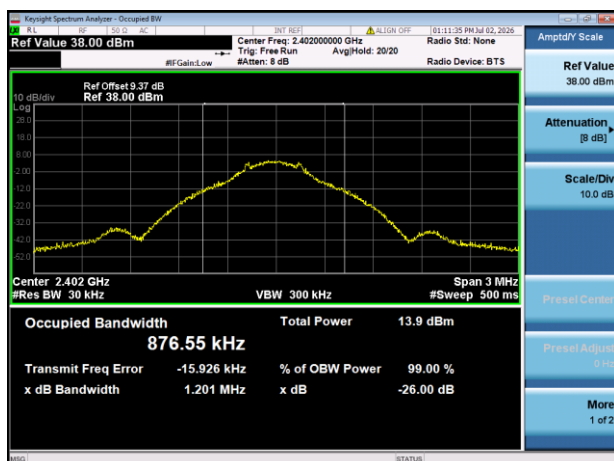
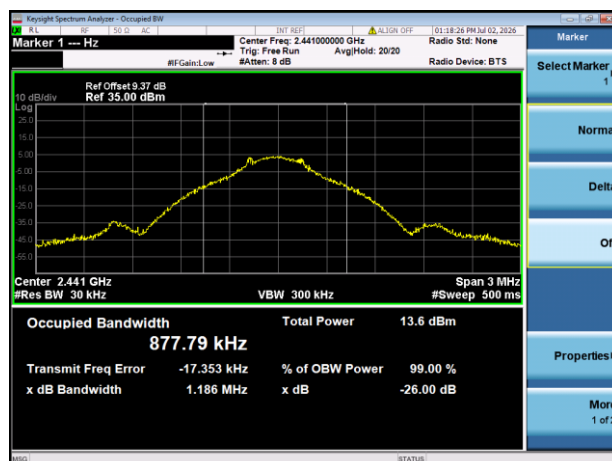


99% Bandwidth

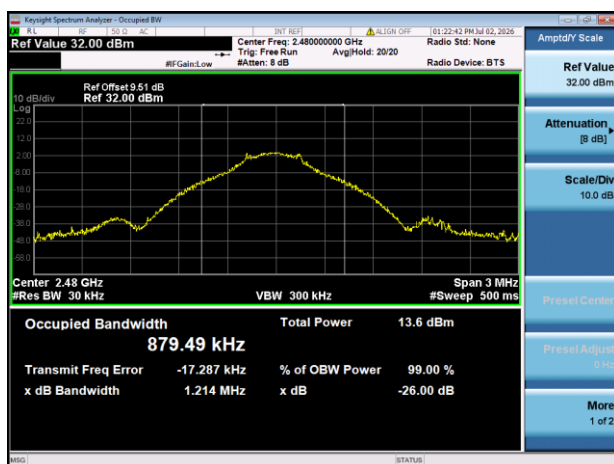
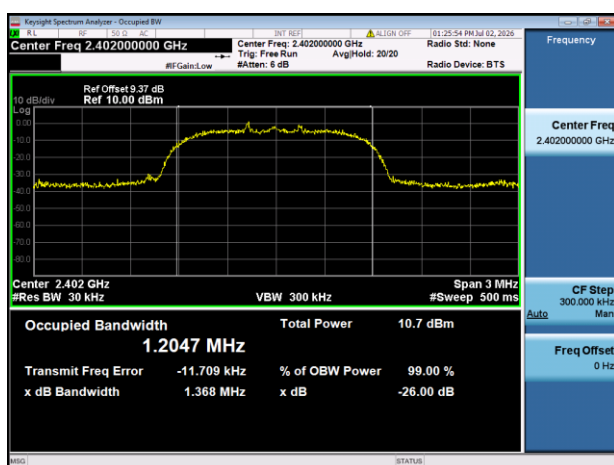
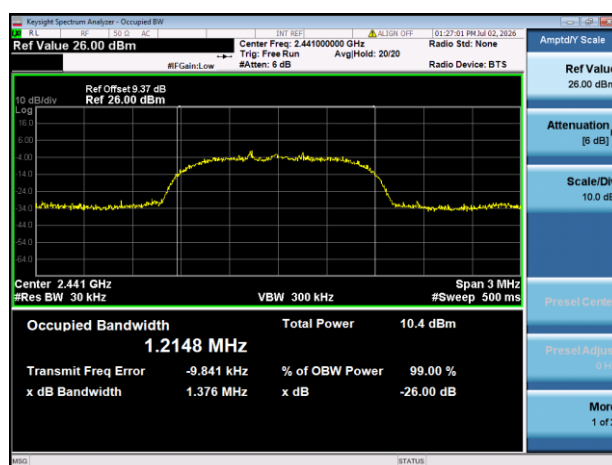
GFSK LOW CHANNEL



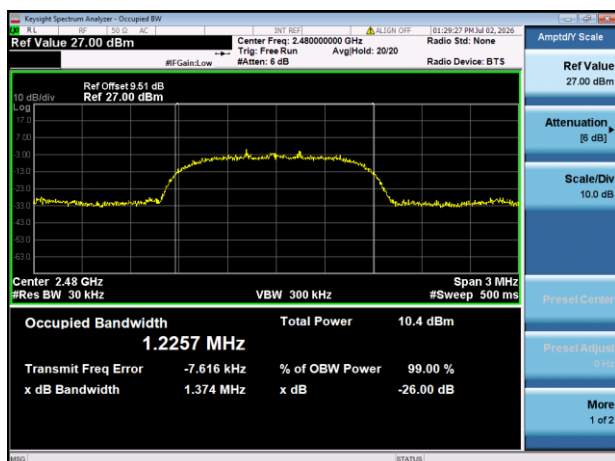
GFSK MIDDLE CHANNEL



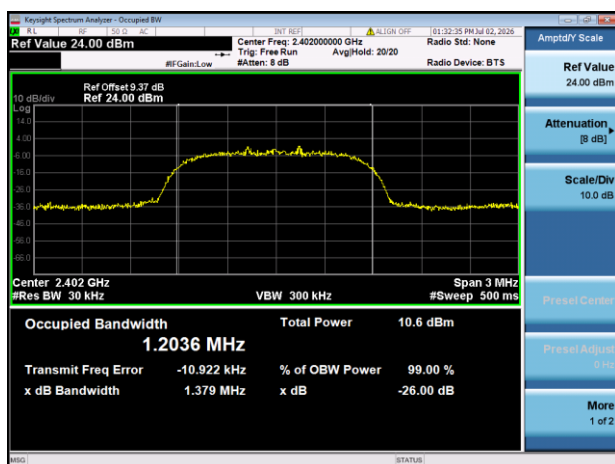
GFSK HIGH CHANNEL

 $\pi/4$ -DQPSK LOW CHANNEL $\pi/4$ -DQPSK MIDDLE CHANNEL

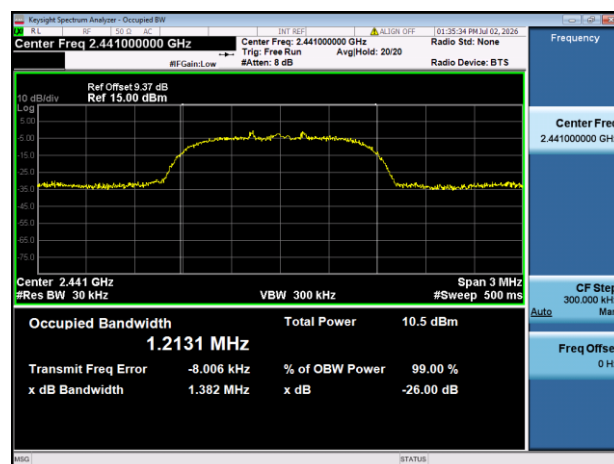
$\pi/4$ -DQPSK HIGH CHANNEL



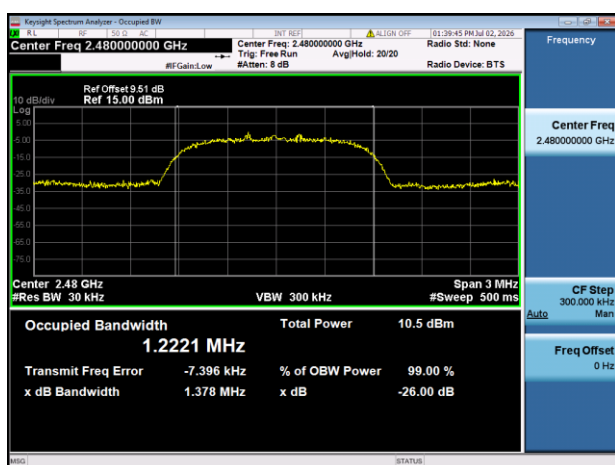
8DPSK LOW CHANNEL



8DPSK MIDDLE CHANNEL



8DPSK HIGH CHANNEL



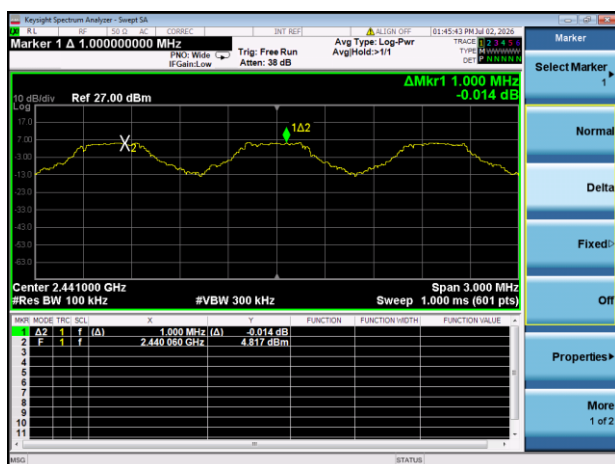
A.4 Hopping Frequency Separation

Test Data

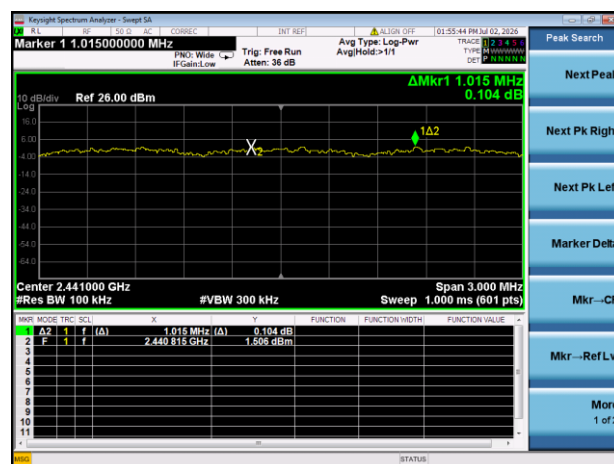
Mode	Frequency separation (MHz)	2/3 of the 20 dB Bandwidth (MHz)	Verdict
GFSK	1.000	0.675	Pass
8DPSK	1.015	0.895	Pass

Test Plots

GFSK



8DPSK



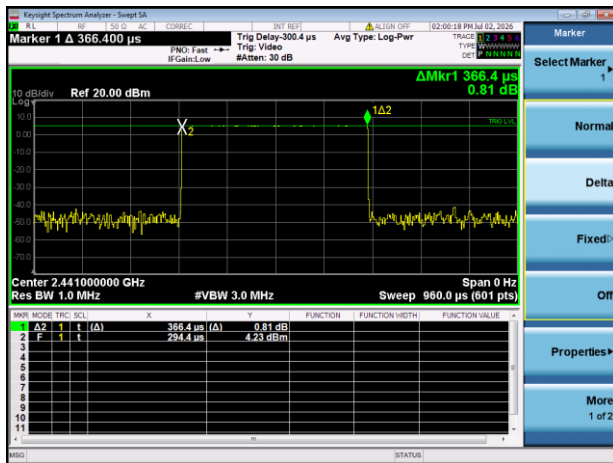
A.5 Average Time of Occupancy

Test Data

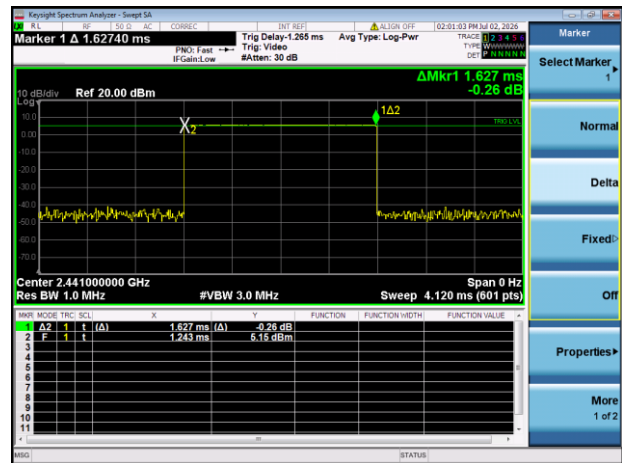
GFSK				
DH Packet	Pulse Width (ms)	Total of Dwell (ms)	Limit (sec)	Verdict
DH 1	0.36640	117.248	0.4	Pass
DH 3	1.62700	260.320	0.4	Pass
DH 5	2.87600	306.773	0.4	Pass
8DPSK				
DH Packet	Pulse Width (ms)	Total of Dwell (ms)	Limit (sec)	Verdict
3DH 1	0.37600	120.320	0.4	Pass
3DH 3	1.62700	260.320	0.4	Pass
3DH 5	2.87600	306.773	0.4	Pass
AFH Mode				
DH Packet	Pulse Width (ms)	Total of Dwell (ms)	Limit (sec)	Verdict
DH 1	0.36640	58.624	0.4	Pass
DH 3	1.62100	129.680	0.4	Pass
DH 5	2.87600	153.387	0.4	Pass

Test Plots

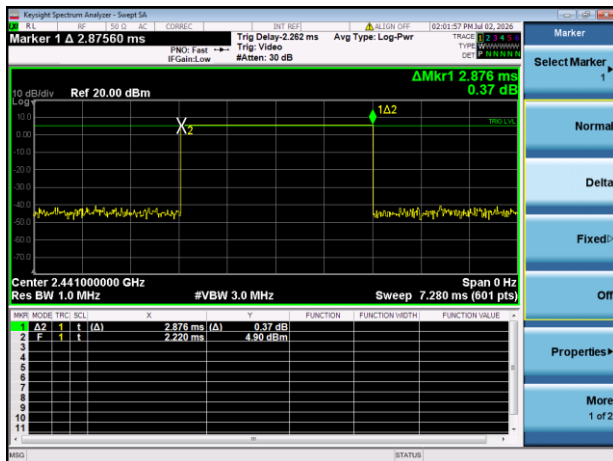
GFSK DH1



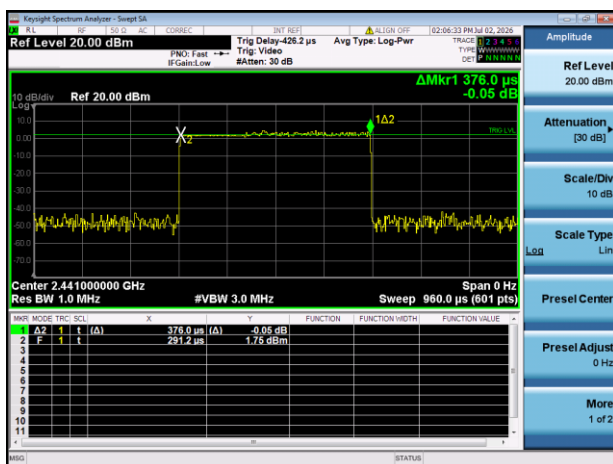
GFSK DH3



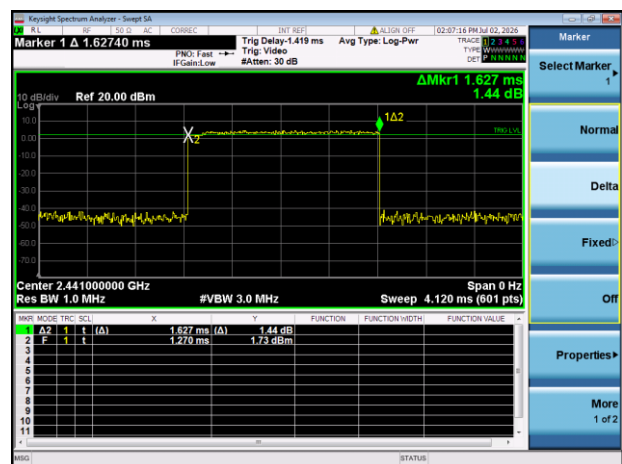
GFSK DH5



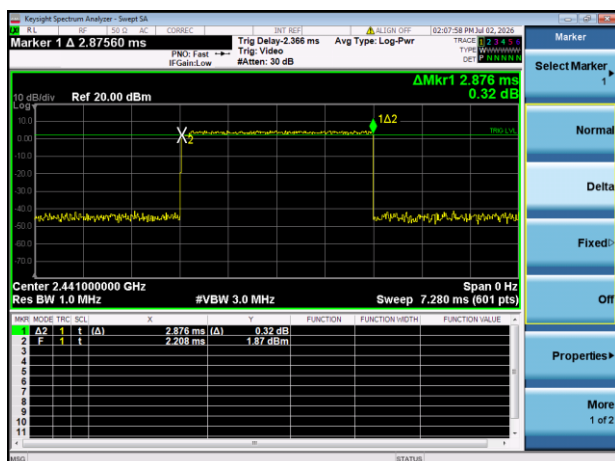
8DPSK 3DH1



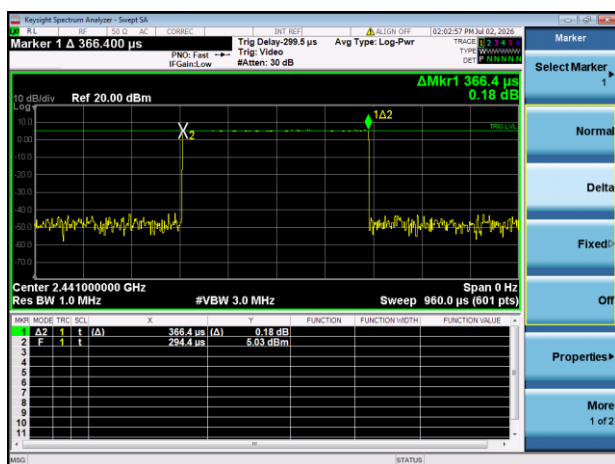
8DPSK 3DH3



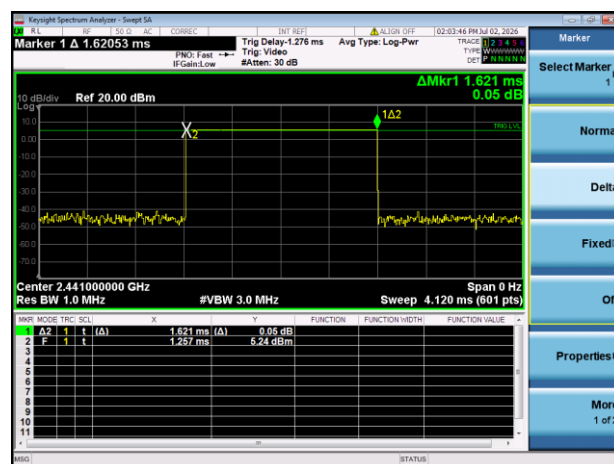
8DPSK 3DH5



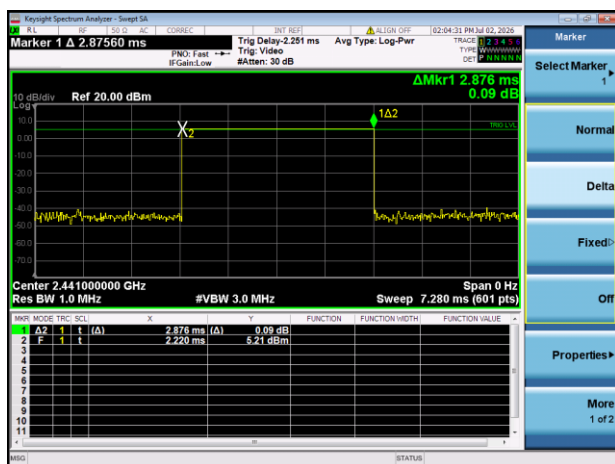
AFH Mode DH1



AFH Mode DH3



AFH Mode DH5



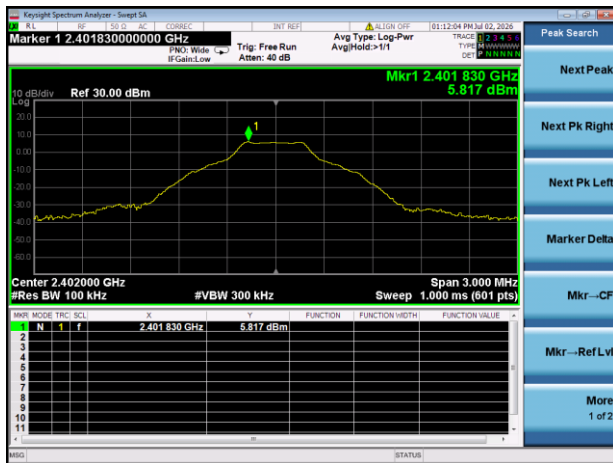
A.6 Conducted Spurious Emissions & Authorized-band band-edge

Test Data

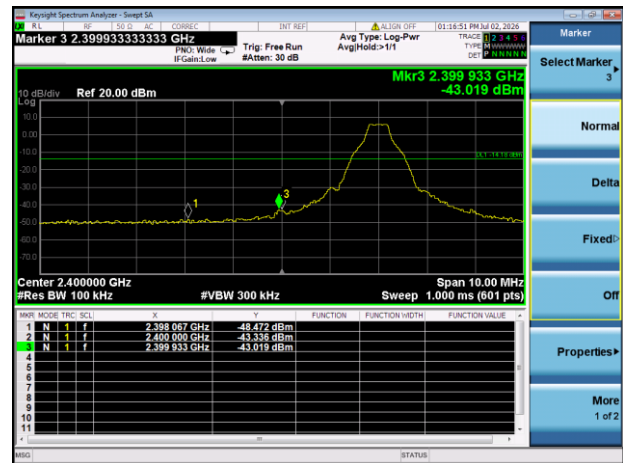
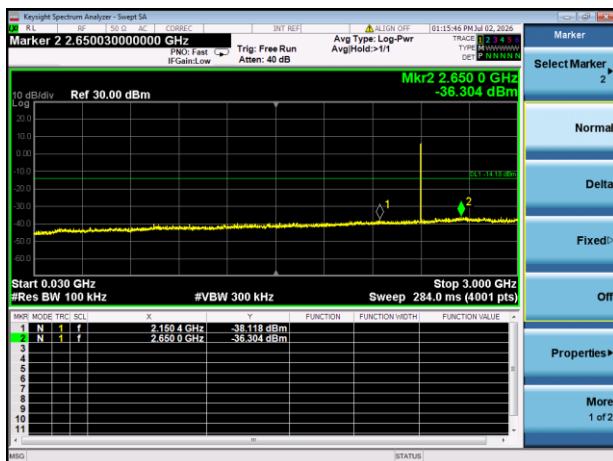
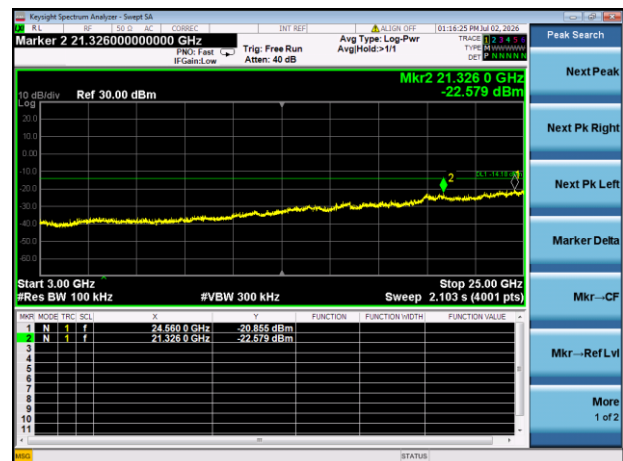
GFSK				
Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low	-20.86	5.82	-14.18	Pass
Middle	-33.50	5.58	-14.42	Pass
High	-21.70	5.47	-14.53	Pass
8DPSK				
Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low	-33.40	1.96	-18.04	Pass
Middle	-32.16	1.69	-18.31	Pass
High	-24.05	1.76	-18.25	Pass
Hopping Mode				
Mode	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
GFSK	-22.98	5.49	-14.51	Pass
8DPSK	-31.04	1.65	-18.35	Pass

Test Plots

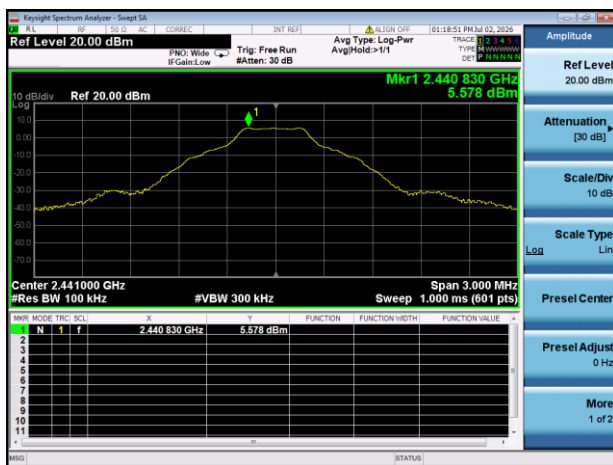
GFSK LOW CHANNEL, CARRIER LEVEL



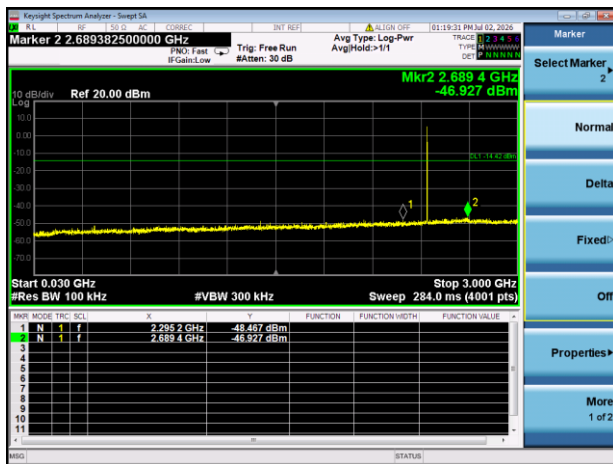
GFSK LOW CHANNEL, BAND EDGE

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

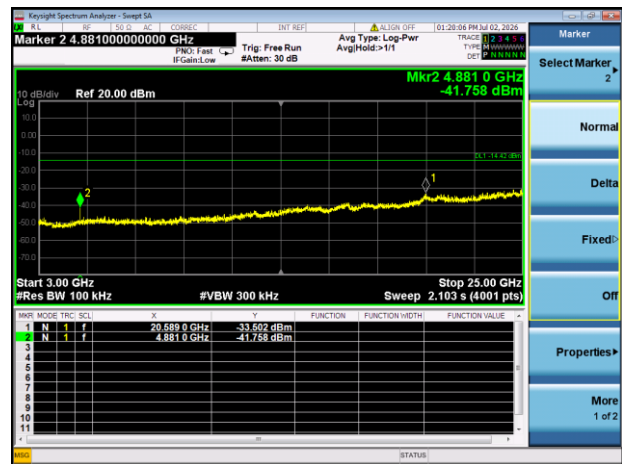
GFSK MIDDLE CHANNEL, CARRIER LEVEL



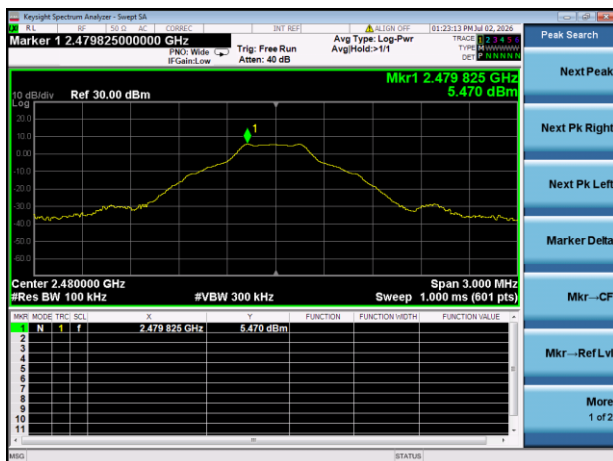
GFSK MIDDLE CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



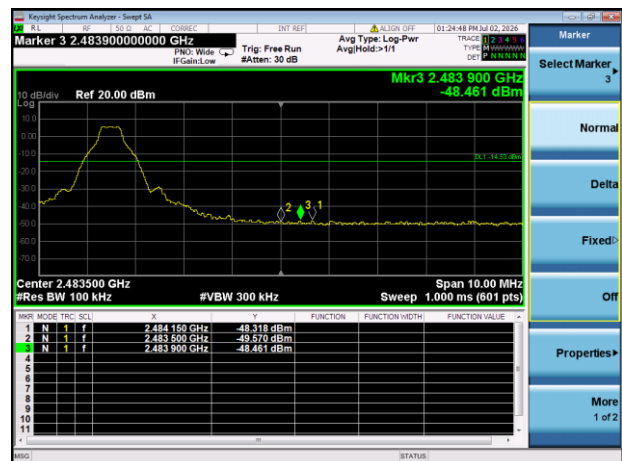
GFSK MIDDLE CHANNEL, SPURIOUS 3 GHz ~ 25 GHz



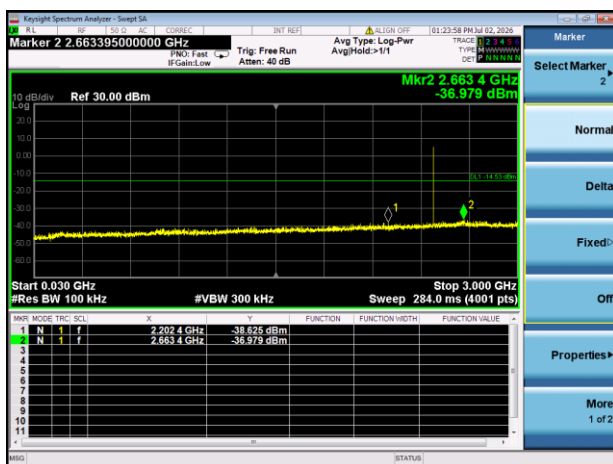
GFSK HIGH CHANNEL, CARRIER LEVEL



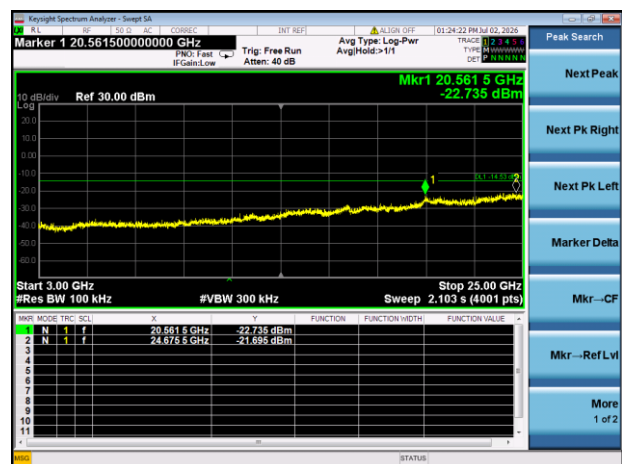
GFSK HIGH CHANNEL, BAND EDGE



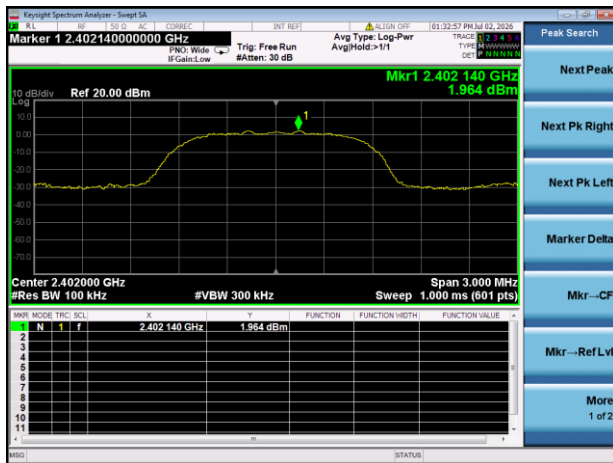
GFSK HIGH CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



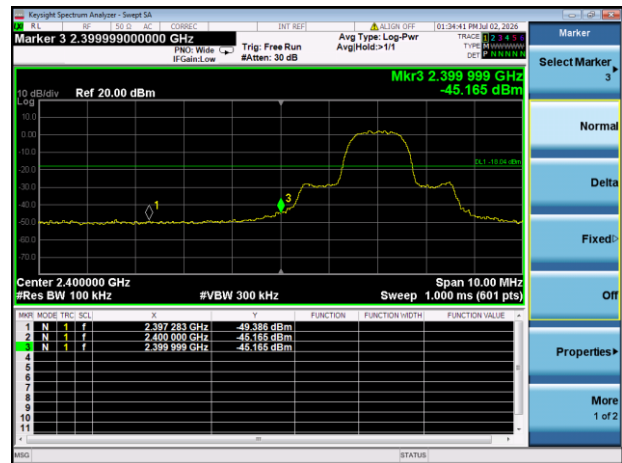
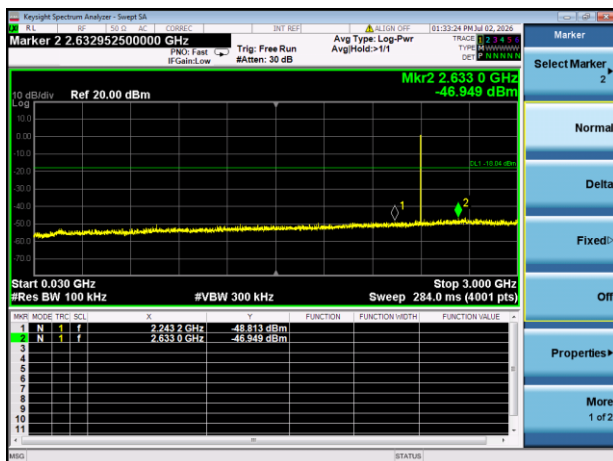
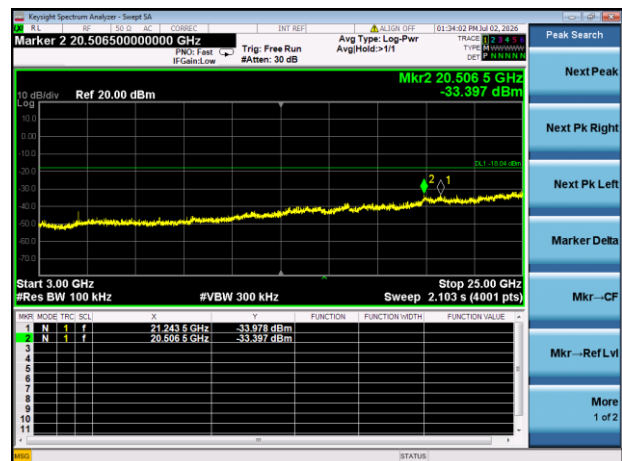
GFSK HIGH CHANNEL, SPURIOUS 3 GHz ~ 25 GHz



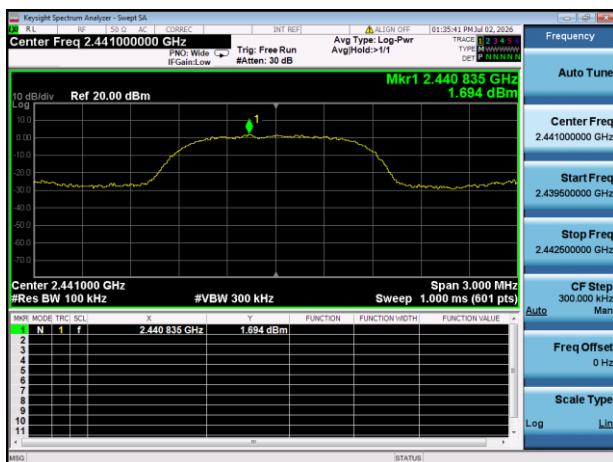
8DPSK LOW CHANNEL, CARRIER LEVEL



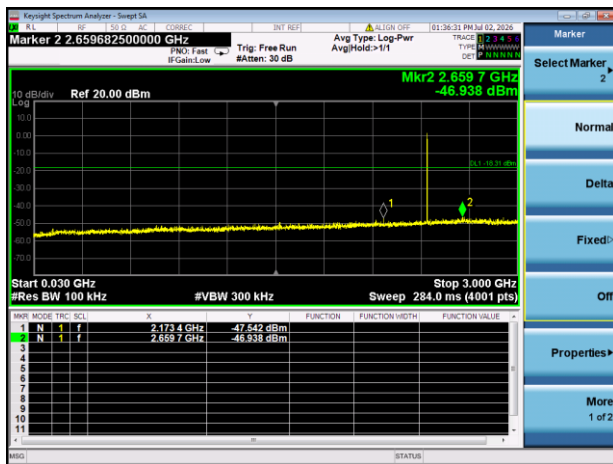
8DPSK LOW CHANNEL, BAND EDGE

8DPSK LOW CHANNEL, SPURIOUS
30 MHz ~ 3 GHz8DPSK LOW CHANNEL, SPURIOUS
3 GHz ~ 25 GHz

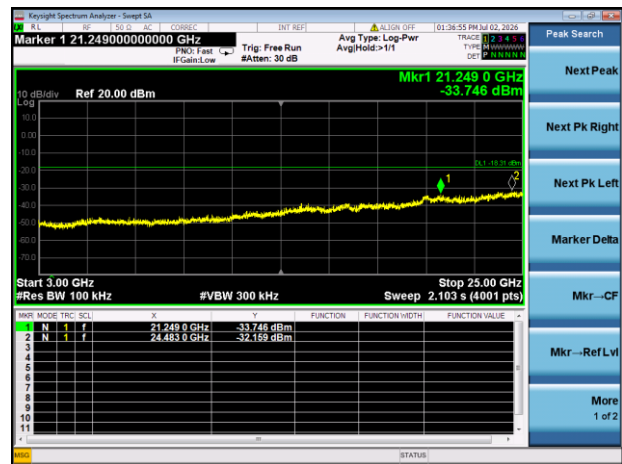
8DPSK MIDDLE CHANNEL, CARRIER LEVEL



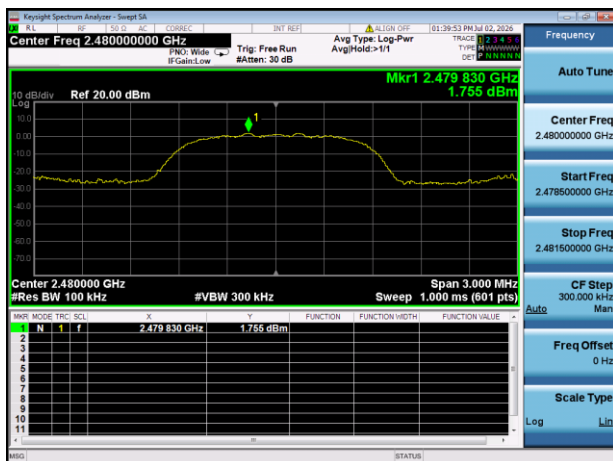
8DPSK MIDDLE CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



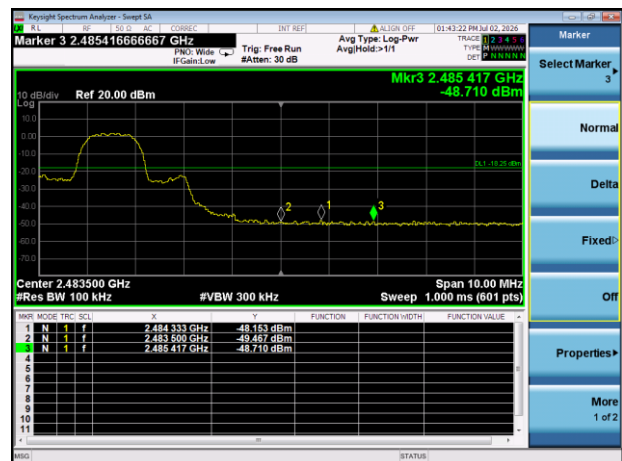
8DPSK MIDDLE CHANNEL, SPURIOUS 3 GHz ~ 25 GHz



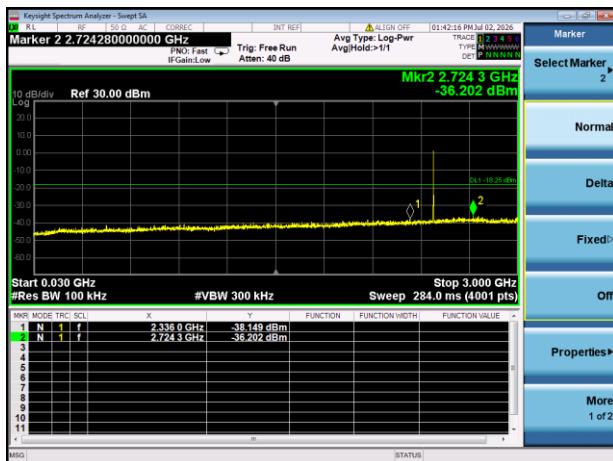
8DPSK HIGH CHANNEL, CARRIER LEVEL



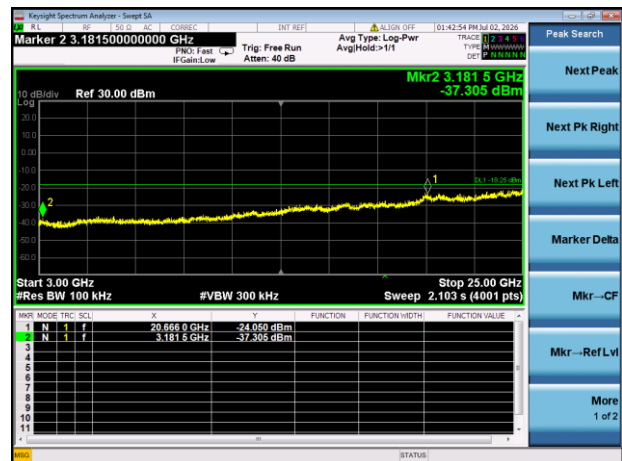
8DPSK HIGH CHANNEL, BAND EDGE



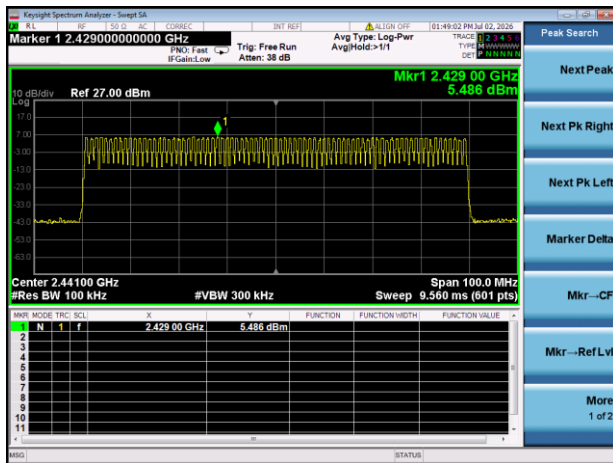
8DPSK HIGH CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



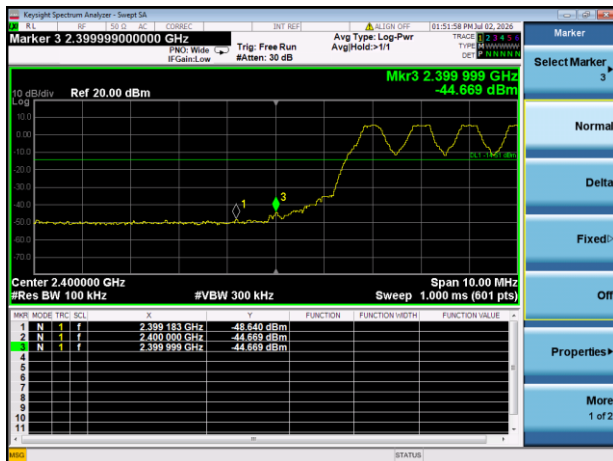
8DPSK HIGH CHANNEL, SPURIOUS 3 GHz ~ 25 GHz



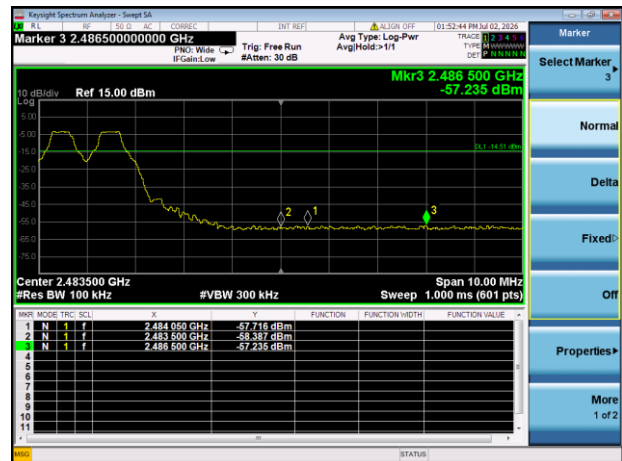
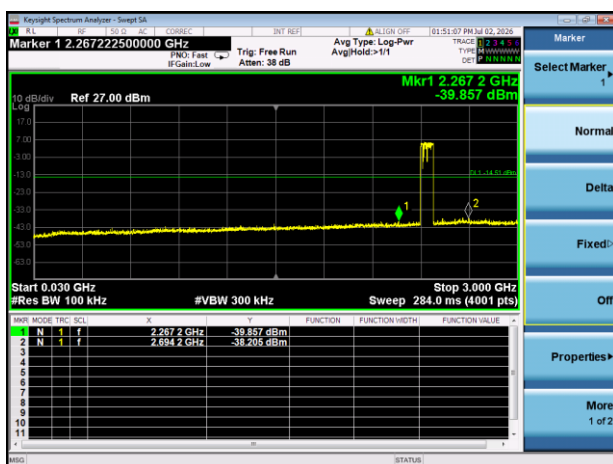
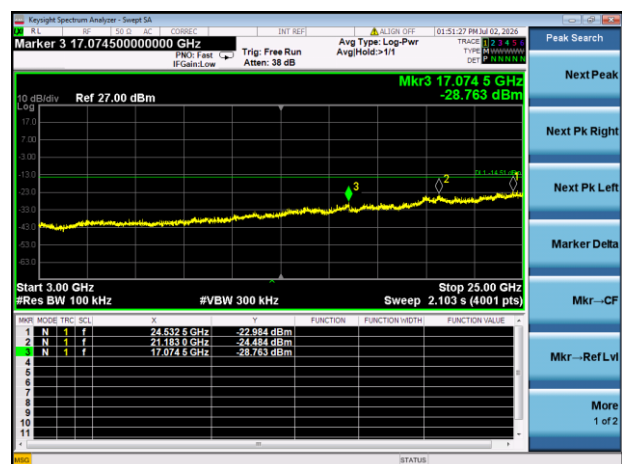
GFSK HOPPING, CARRIER LEVEL



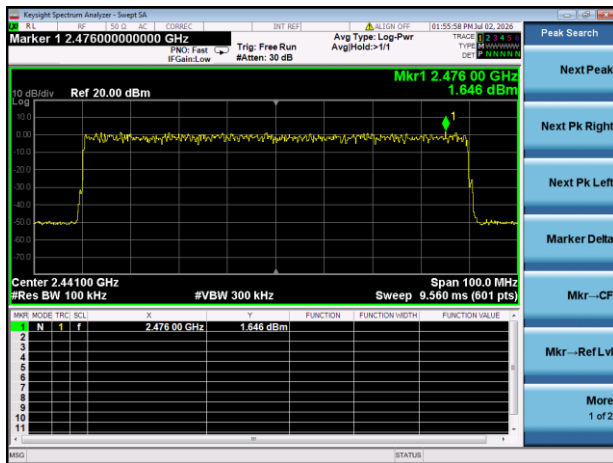
GFSK HOPPING BAND EDGE (LOW)



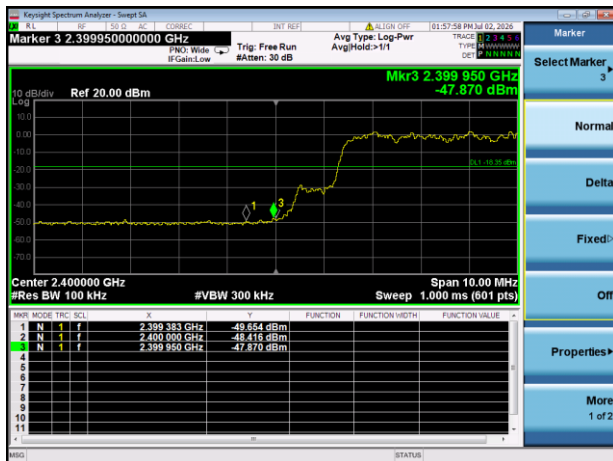
GFSK HOPPING BAND EDGE (HIGH)

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

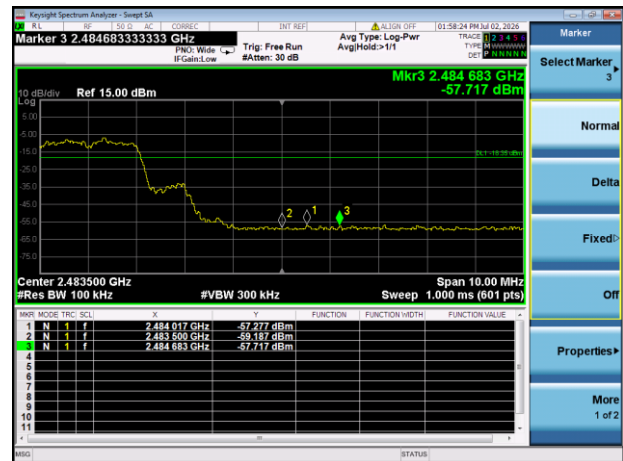
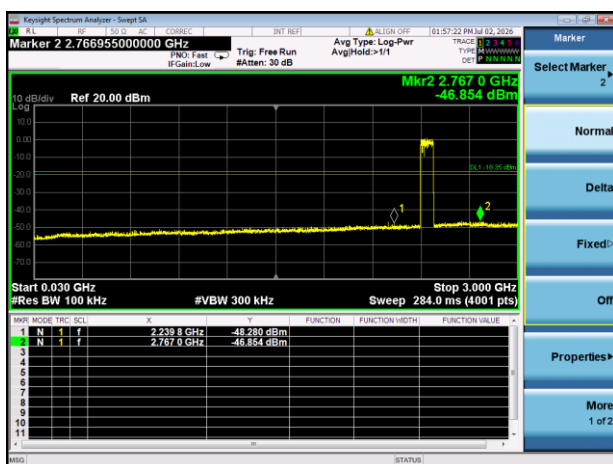
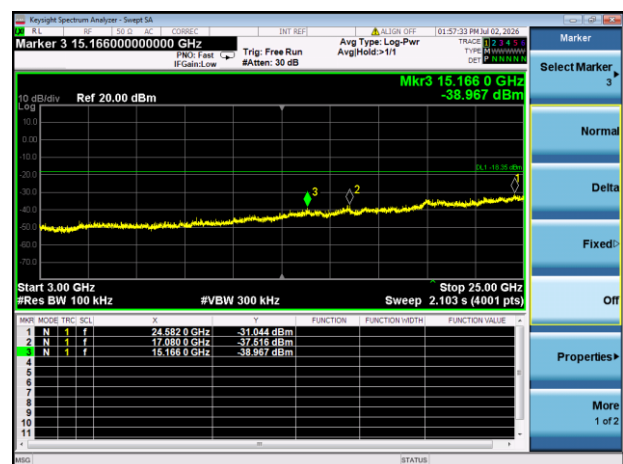
8DPSK HOPPING, CARRIER LEVEL



8DPSK Hopping BAND EDGE (LOW)



8DPSK Hopping BAND EDGE (HIGH)

8DPSK Hopping Mode, SPURIOUS
30 MHz ~ 3 GHz8DPSK Hopping Mode, SPURIOUS
3GHz ~ 25 GHz

A.7 Conducted Emissions

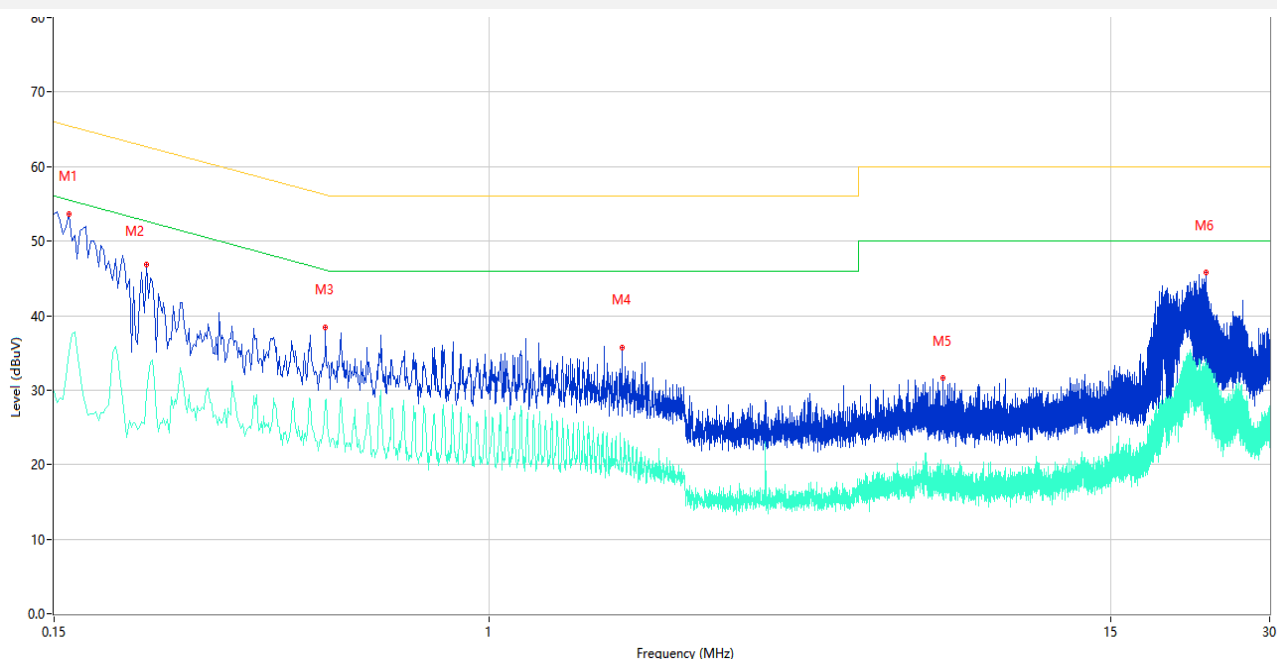
Note¹: The EUT is working in the Normal link mode. All modes have been tested and normal link mode is worst.

Note²: 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.

Note³: Results (dBuV) = Original reading level of Spectrum Analyzer (dBuV) + Factor (dB)

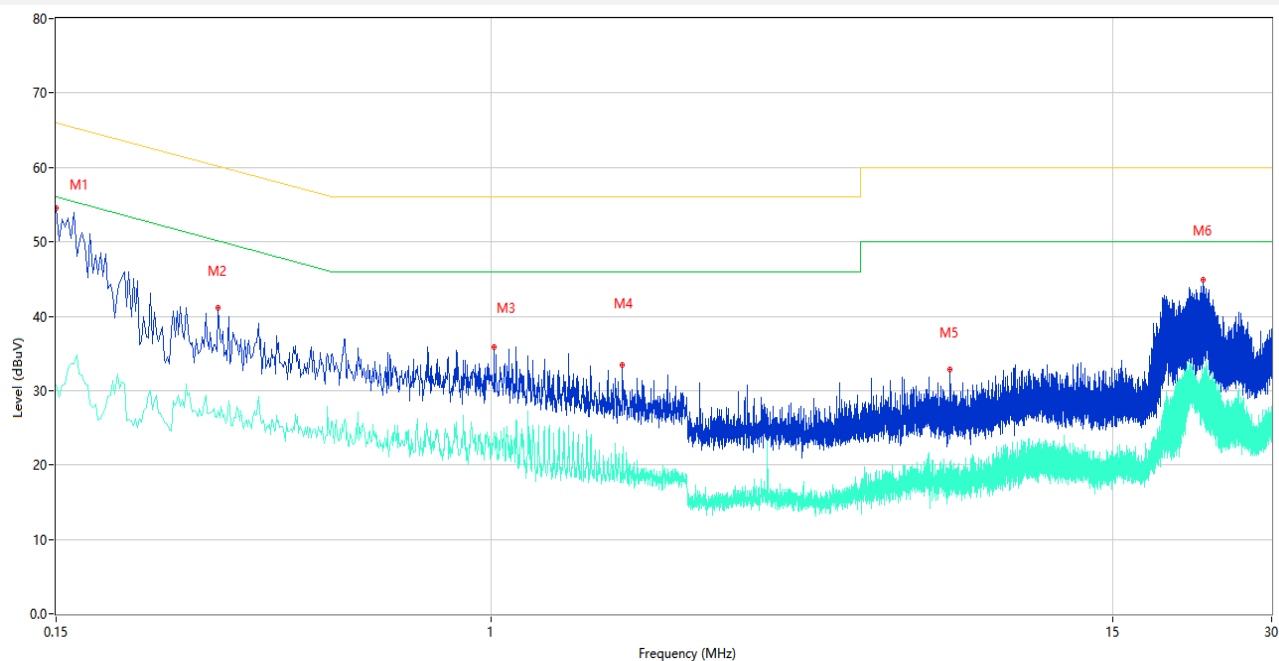
Test Data and Plots

PHASE L



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.160	53.69	10.26	65.46	11.77	Peak	L	Pass
1**	0.160	35.17	10.26	55.46	20.29	AV	L	Pass
2	0.224	46.85	10.24	62.67	15.82	Peak	L	Pass
2**	0.224	29.54	10.24	52.67	23.13	AV	L	Pass
3	0.490	38.48	10.25	56.17	17.69	Peak	L	Pass
3**	0.490	28.46	10.25	46.17	17.71	AV	L	Pass
4	1.782	35.78	10.38	56.00	20.22	Peak	L	Pass
4**	1.782	18.96	10.38	46.00	27.04	AV	L	Pass
5	7.232	31.63	11.19	60.00	28.37	Peak	L	Pass
5**	7.232	20.09	11.19	50.00	29.91	AV	L	Pass
6	22.698	45.78	14.84	60.00	14.22	Peak	L	Pass
6**	22.698	32.59	14.84	50.00	17.41	AV	L	Pass

PHASE N



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.150	54.52	10.18	66.00	11.48	Peak	N	Pass
1**	0.150	30.74	10.18	56.00	25.26	AV	N	Pass
2	0.304	41.15	10.16	60.13	18.98	Peak	N	Pass
2**	0.304	27.24	10.16	50.13	22.89	AV	N	Pass
3	1.012	35.85	10.20	56.00	20.15	Peak	N	Pass
3**	1.012	23.59	10.20	46.00	22.41	AV	N	Pass
4	1.772	33.41	10.28	56.00	22.59	Peak	N	Pass
4**	1.772	20.35	10.28	46.00	25.65	AV	N	Pass
5	7.388	32.80	11.13	60.00	27.20	Peak	N	Pass
5**	7.388	17.68	11.13	50.00	32.32	AV	N	Pass
6	22.264	44.96	14.80	60.00	15.04	Peak	N	Pass
6**	22.264	28.52	14.80	50.00	21.48	AV	N	Pass

A.8 Radiated Spurious 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.

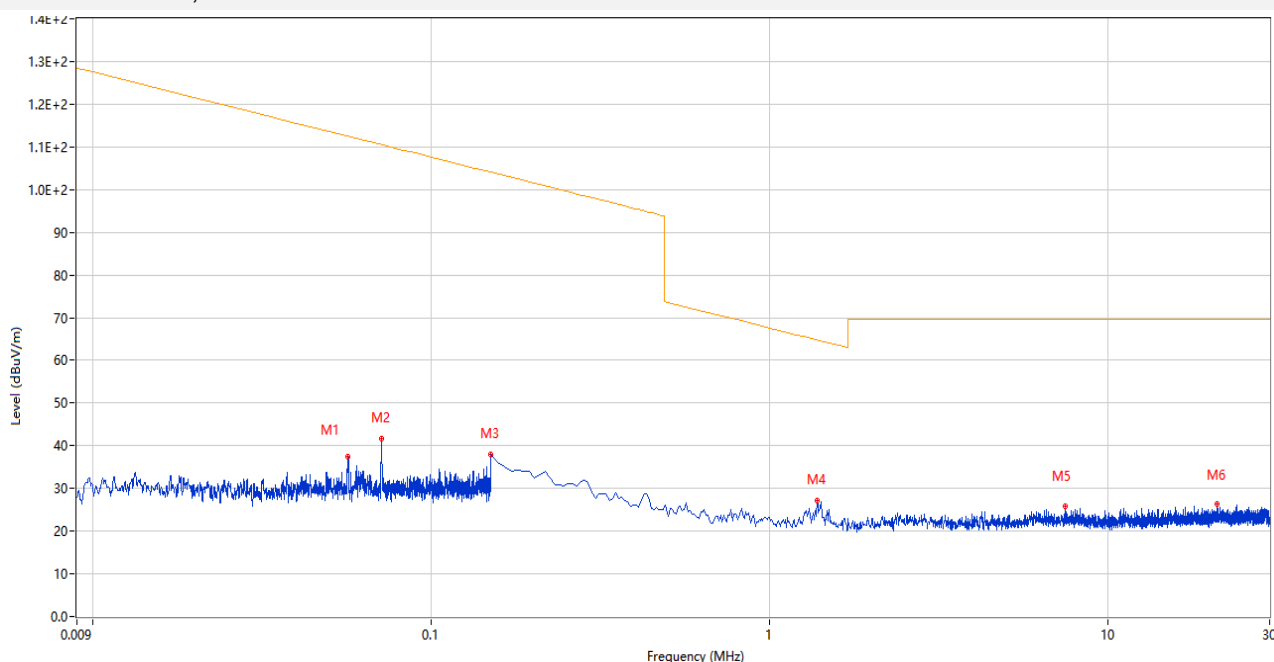
Note³: The EUT is working in the Normal link mode below 1 GHz. All modes have been tested and DH5-Hopping mode is the worst.

Note⁴: Results (dBuV/m) = Original reading level of Spectrum Analyzer (dBuV/m) + Factor (dB)

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.

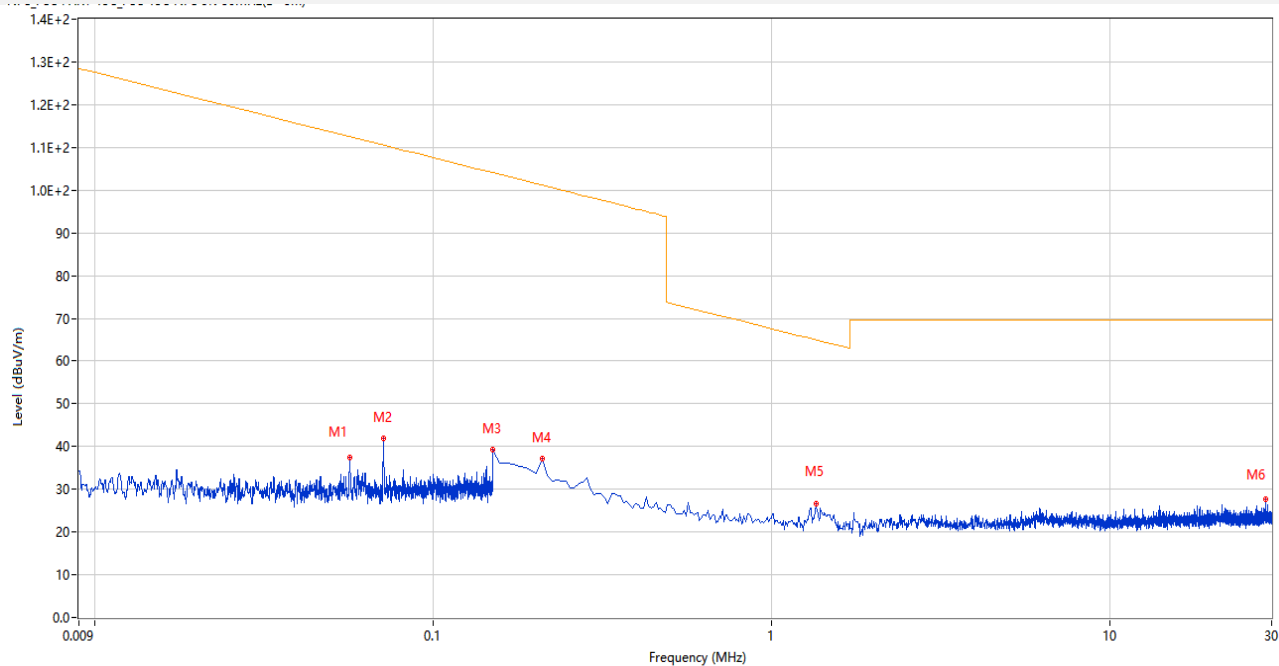
Test Data and Plots

9 KHz to 30 MHz, ANT H



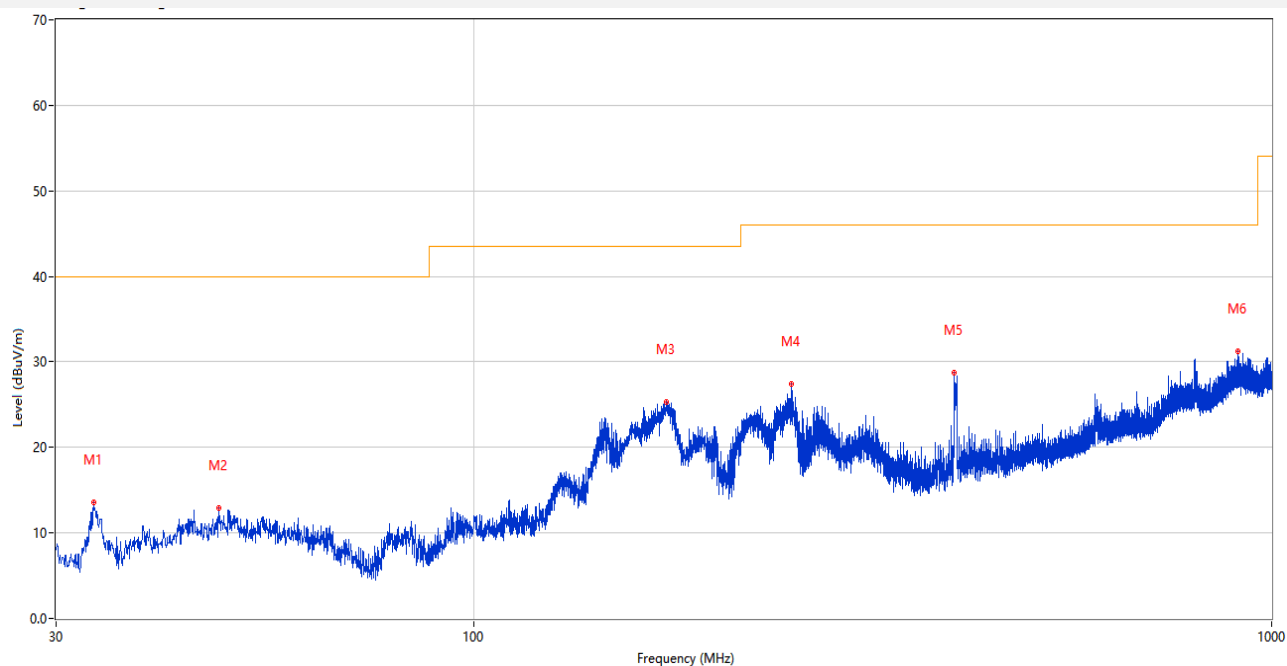
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	0.057	37.43	20.75	112.5	75.07	Peak	204.00	100	Horizontal	Pass
2	0.071	41.65	20.72	110.5	68.85	Peak	117.00	100	Horizontal	Pass
3	0.150	31.18	20.59	104.1	72.92	Peak	262.00	100	Horizontal	Pass
4	1.381	27.11	19.43	64.8	37.69	Peak	237.00	100	Horizontal	Pass
5	7.448	25.93	20.82	69.5	43.57	Peak	321.00	100	Horizontal	Pass
6	20.948	26.50	21.56	69.5	43.00	Peak	49.00	100	Horizontal	Pass

9 KHz to 30 MHz, ANT V



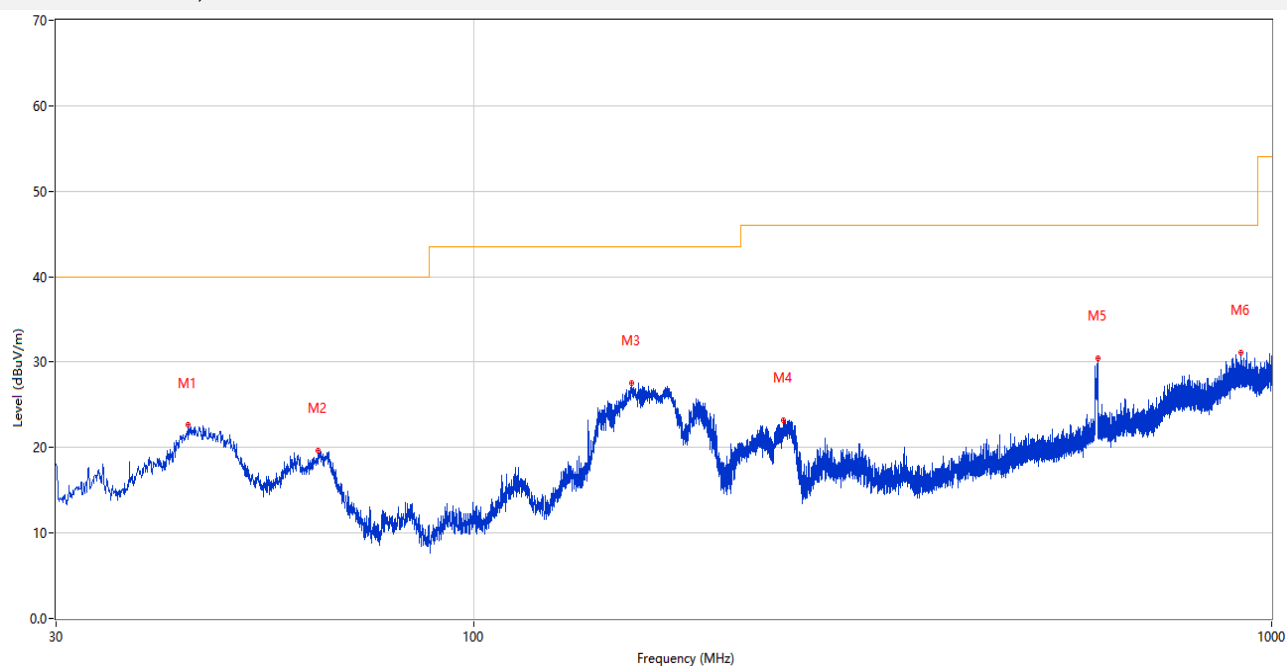
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	0.057	37.35	20.75	112.5	75.15	Peak	0.00	100	Vertical	Pass
2	0.071	41.85	20.72	110.5	68.65	Peak	188.00	100	Vertical	Pass
3	0.150	31.46	20.59	104.1	72.64	Peak	122.00	100	Vertical	Pass
4	0.210	37.12	20.50	101.2	64.08	Peak	60.00	100	Vertical	Pass
5	1.351	26.66	19.45	65.0	38.34	Peak	301.00	100	Vertical	Pass
6	28.821	27.60	21.96	69.5	41.90	Peak	206.00	100	Vertical	Pass

30 MHz to 1 GHz, ANT H



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	33.444	13.53	-28.68	40.0	26.47	Peak	289.00	100	Horizontal	Pass
2	47.993	12.89	-25.26	40.0	27.11	Peak	319.00	200	Horizontal	Pass
3	174.579	25.28	-28.28	43.5	18.22	Peak	268.00	200	Horizontal	Pass
4	250.044	27.48	-24.18	46.0	18.52	Peak	253.00	100	Horizontal	Pass
5	400.589	28.77	-20.69	46.0	17.23	Peak	214.00	100	Horizontal	Pass
6	906.007	31.26	-8.71	46.0	14.74	Peak	268.00	200	Horizontal	Pass

30 MHz to 1 GHz, ANT V

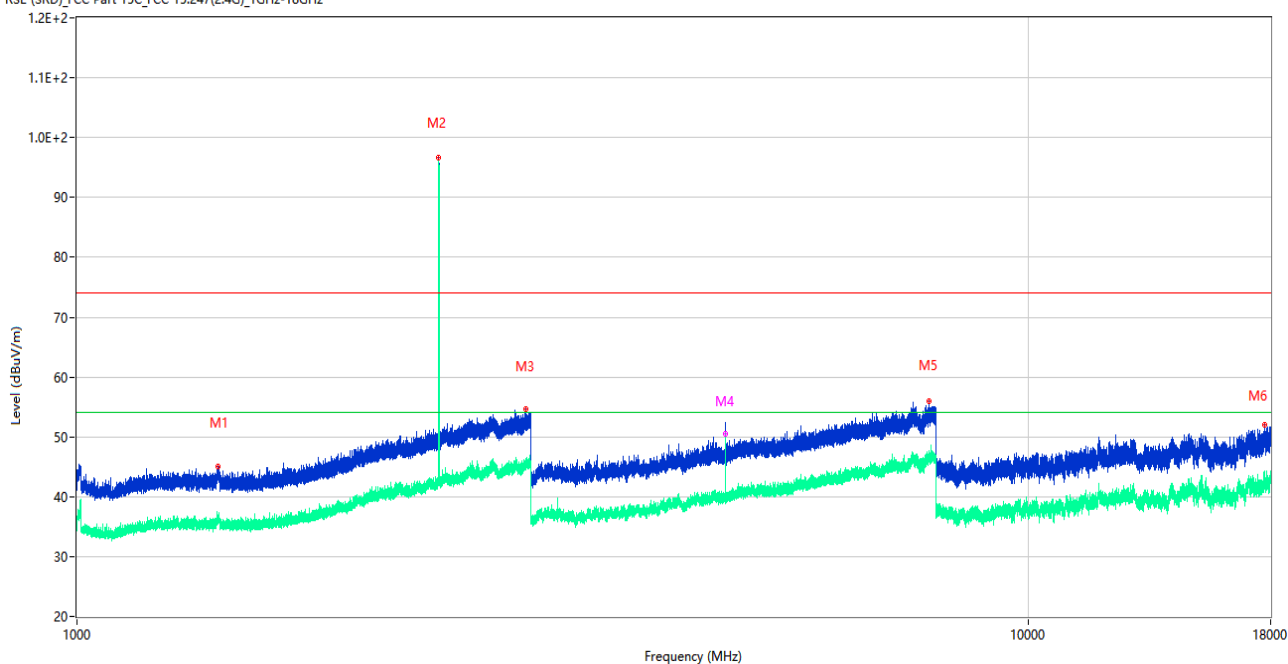


No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	43.919	22.61	-25.67	40.0	17.39	Peak	318.00	100	Vertical	Pass
2	63.950	19.69	-26.93	40.0	20.31	Peak	96.00	100	Vertical	Pass
3	157.604	27.56	-29.17	43.5	15.94	Peak	325.00	100	Vertical	Pass
4	244.370	23.15	-24.38	46.0	22.85	Peak	20.00	100	Vertical	Pass
5	605.113	30.41	-15.02	46.0	15.59	Peak	334.00	100	Vertical	Pass
6	915.950	31.13	-8.54	46.0	14.87	Peak	288.00	200	Vertical	Pass

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

GFSK LOW CHANNEL 1 GHz to 18 GHz, ANT H

RSE (SRD)_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	1407.500	44.95	74.0	29.05	Peak	31.00	300	Horizontal	Pass
1**	1407.500	36.56	54.0	17.44	AV	31.00	300	Horizontal	Pass
2	2402.200	96.61	--	--	Peak	352.00	150	Horizontal	N/A
2**	2402.200	96.27	--	--	AV	352.00	150	Horizontal	N/A
3	2965.400	54.68	74.0	19.32	Peak	338.00	150	Horizontal	Pass
3**	2965.400	44.78	54.0	9.22	AV	338.00	150	Horizontal	Pass
4	4804.250	52.32	74.0	21.68	Peak	207.00	100	Horizontal	Pass
4**	4804.250	50.57	54.0	3.43	AV	207.00	100	Horizontal	Pass
5	7864.750	55.96	74.0	18.04	Peak	47.00	400	Horizontal	Pass
5**	7864.750	46.73	54.0	7.27	AV	47.00	400	Horizontal	Pass
6	17735.137	51.99	74.0	22.01	Peak	57.00	400	Horizontal	Pass
6**	17735.137	43.57	54.0	10.43	AV	57.00	400	Horizontal	Pass