

$\pi/4$ -DQPSK HIGH CHANNEL

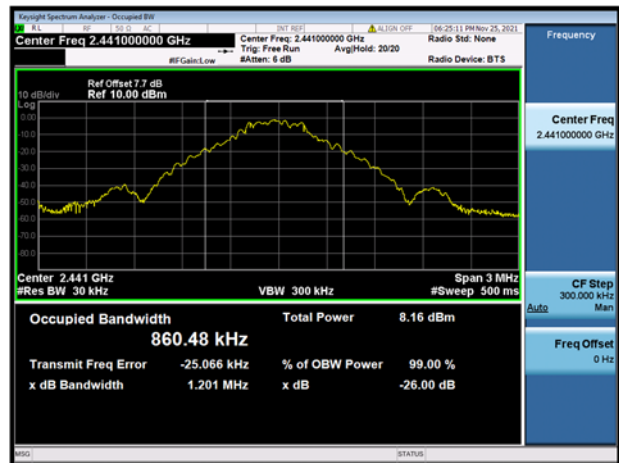


99% Bandwidth

GFSK LOW CHANNEL

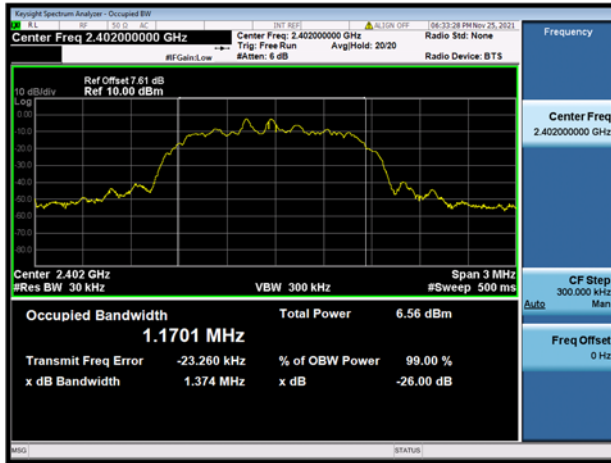
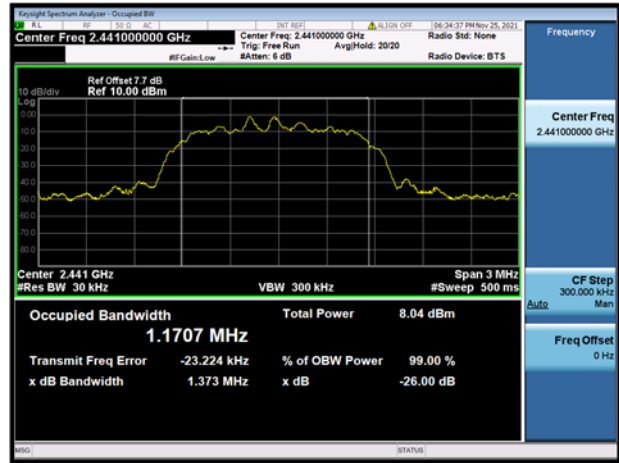
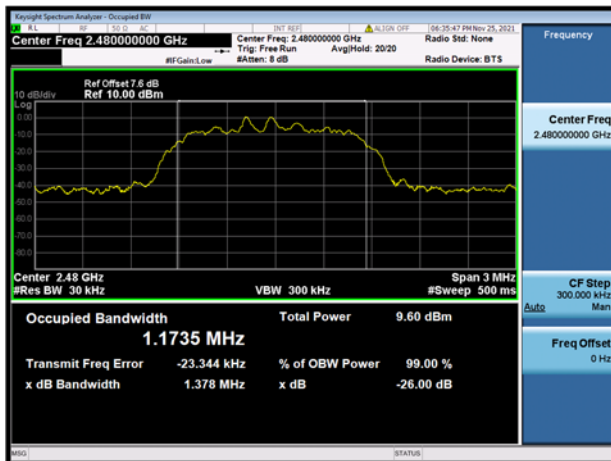


GFSK MIDDLE CHANNEL



GFSK HIGH CHANNEL



$\pi/4$ -DQPSK LOW CHANNEL

 $\pi/4$ -DQPSK MIDDLE CHANNEL

 $\pi/4$ -DQPSK HIGH CHANNEL


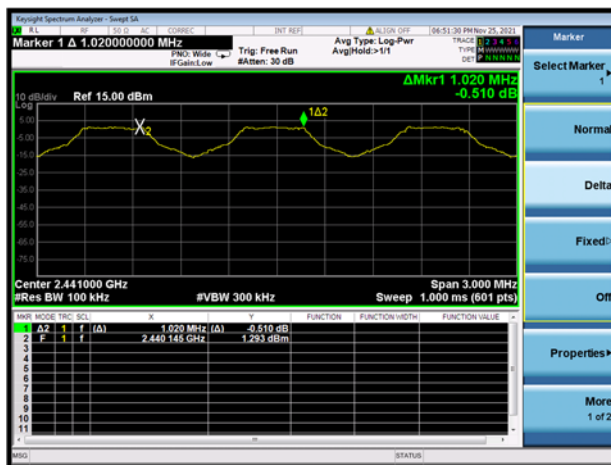
A.4 Hopping Frequency Separation

Test Data

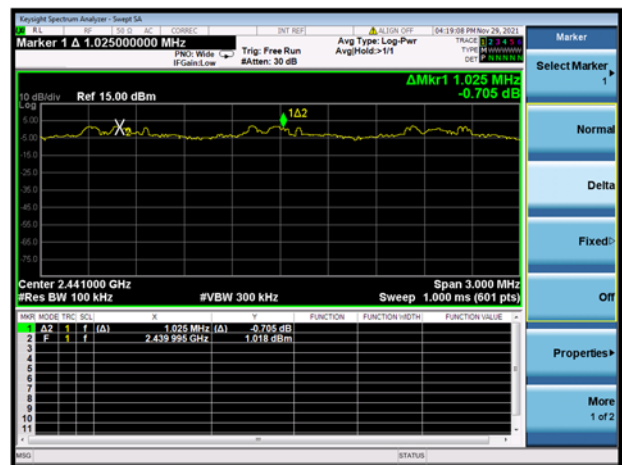
Mode	Frequency separation (MHz)	2/3 of the 20 dB Bandwidth (MHz)	Verdict
GFSK	1.020	0.640	Pass
$\pi/4$ -DQPSK	1.025	0.860	Pass

Test Plots

GFSK



$\pi/4$ -DQPSK



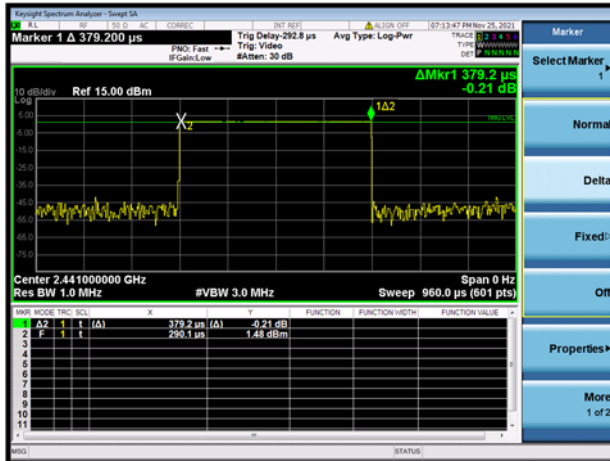
A.5 Average Time of Occupancy

Test Data

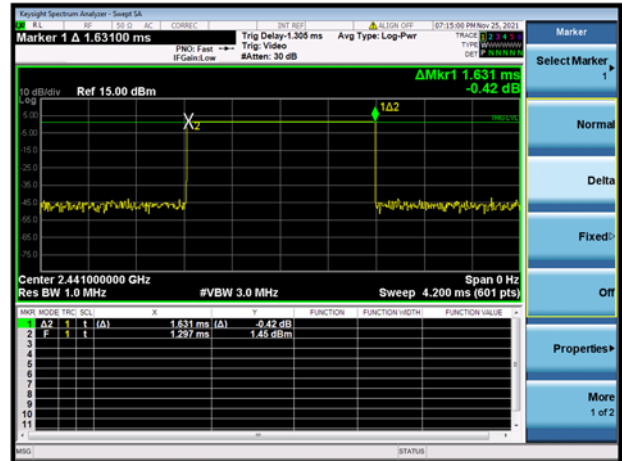
GFSK				
DH Packet	Pulse Width (ms)	Total of Dwell (ms)	Limit (sec)	Verdict
DH 1	0.37920	121.344	0.4	Pass
DH 3	1.63100	260.960	0.4	Pass
DH 5	2.87600	306.773	0.4	Pass
$\pi/4$ -DQPSK				
DH Packet	Pulse Width (ms)	Total of Dwell (ms)	Limit (sec)	Verdict
DH 1	0.39200	125.440	0.4	Pass
DH 3	1.64100	262.560	0.4	Pass
DH 5	2.87600	306.773	0.4	Pass
AFH Mode				
DH Packet	Pulse Width (ms)	Total of Dwell (ms)	Limit (sec)	Verdict
DH 1	0.38080	60.928	0.4	Pass
DH 3	1.63400	130.720	0.4	Pass
DH 5	2.88800	154.027	0.4	Pass

Test Plots

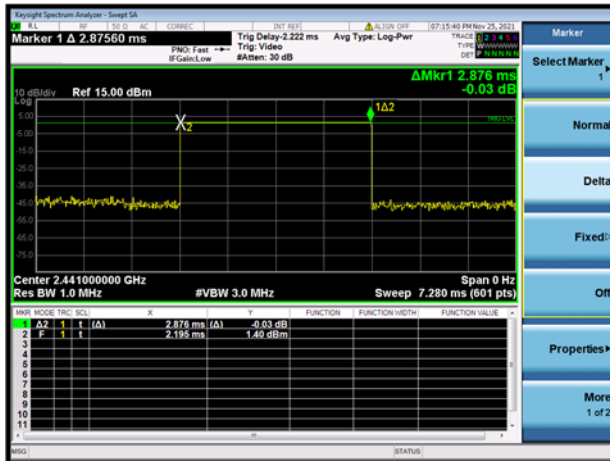
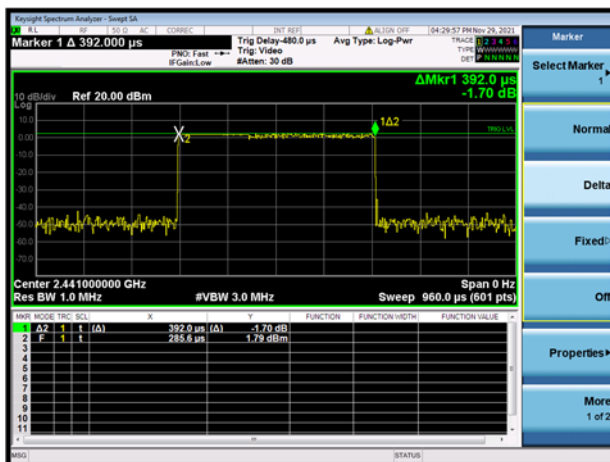
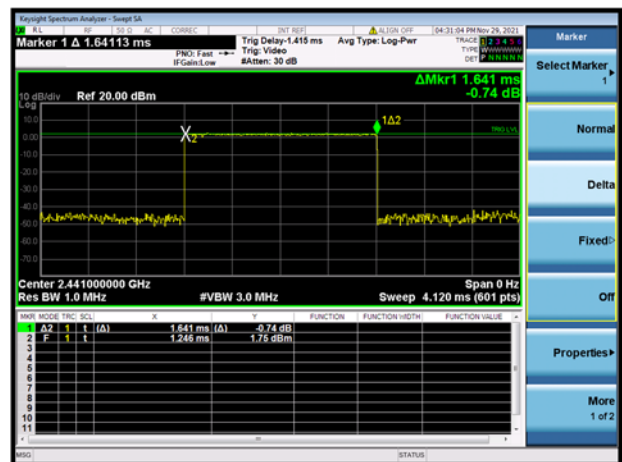
GFSK DH1

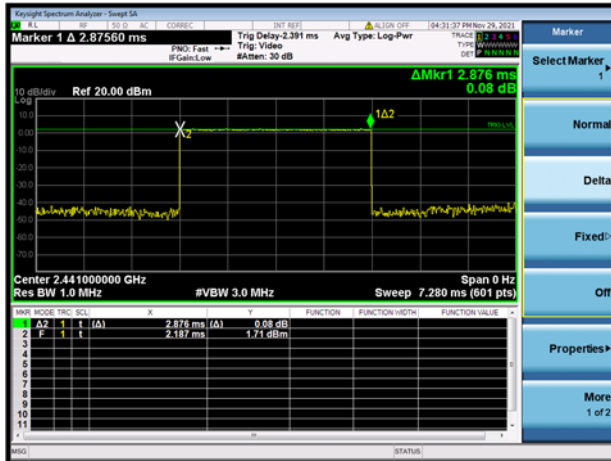


GFSK DH3

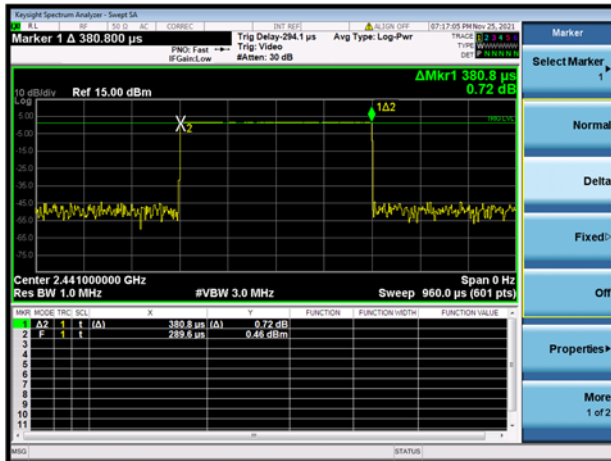


GFSK DH5

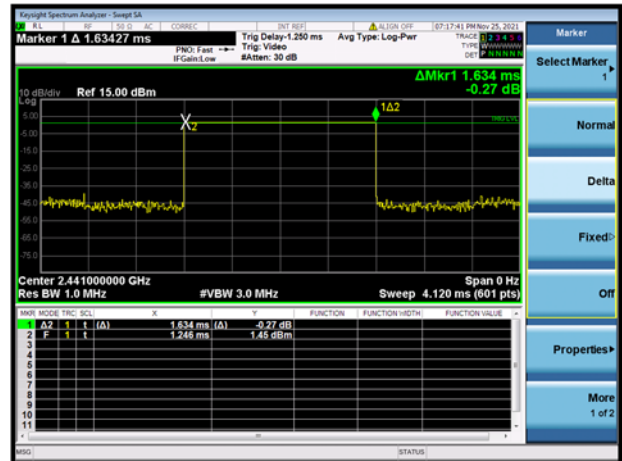

 $\pi/4$ -DQPSK DH1

 $\pi/4$ -DQPSK DH3


$\pi/4$ -DQPSK DH5


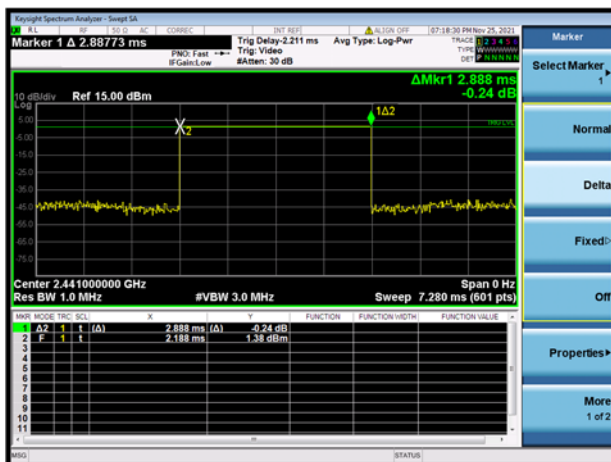
AFH Mode DH1



AFH Mode DH3



AFH Mode DH5



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

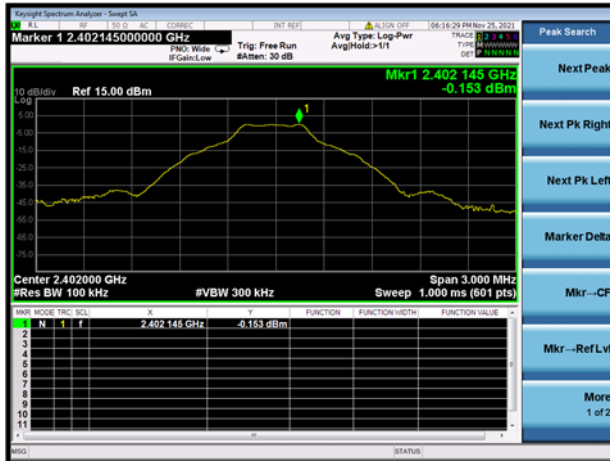
Test Data

GFSK				
Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low	-34.87	-0.15	-20.15	Pass
Middle	-36.21	1.34	-18.66	Pass
High	-35.68	2.80	-17.20	Pass
$\pi/4$ -DQPSK				
Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low	-36.00	0.11	-19.89	Pass
Middle	-35.36	1.69	-18.31	Pass
High	-35.10	3.17	-16.83	Pass

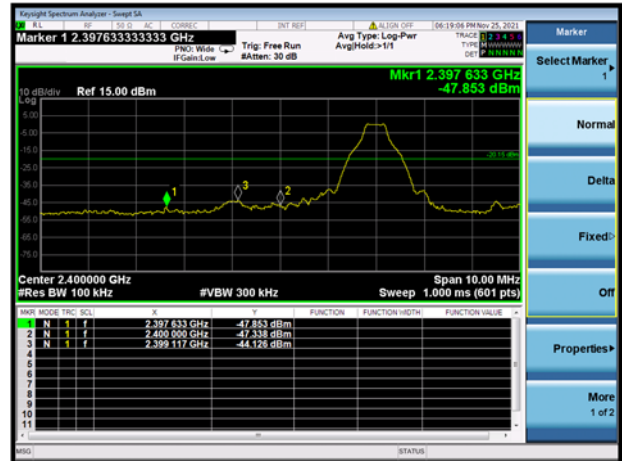
Hopping Mode				
Mode	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
GFSK	-37.27	2.57	-17.43	Pass
$\pi/4$ -DQPSK	-36.13	2.55	-17.45	Pass

Test Plots

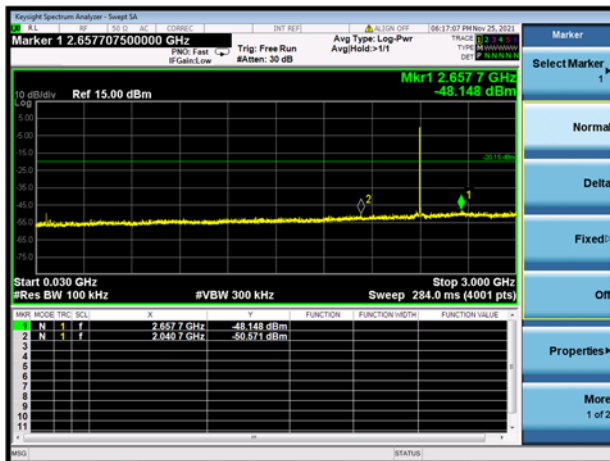
GFSK LOW CHANNEL, CARRIER LEVEL



GFSK LOW CHANNEL, BAND EDGE



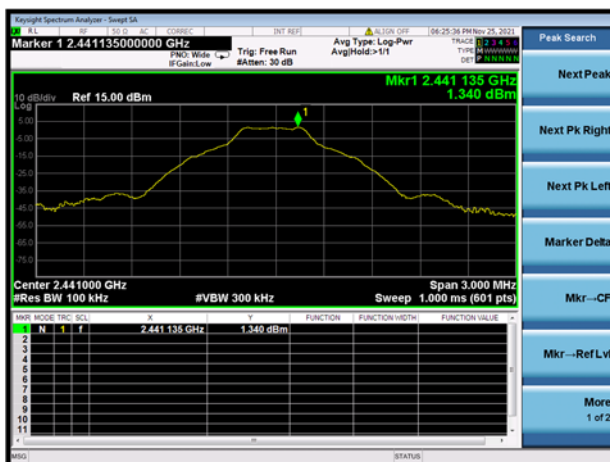
GFSK LOW CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



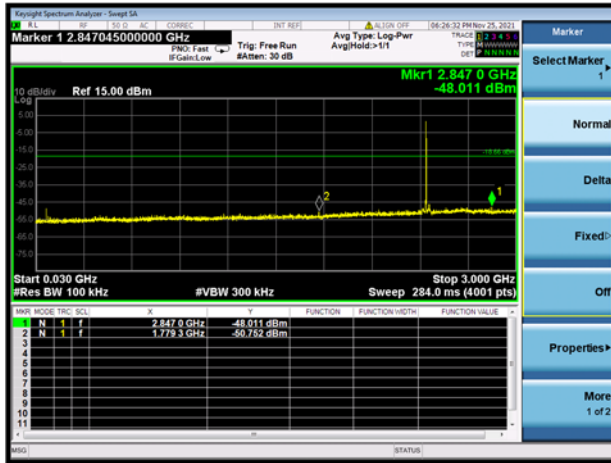
GFSK LOW CHANNEL, SPURIOUS 3 GHz ~ 25 GHz



GFSK MIDDLE CHANNEL, CARRIER LEVEL



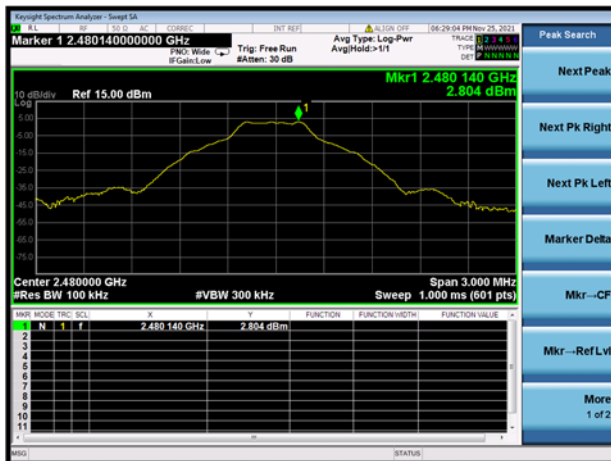
GFSK MIDDLE CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



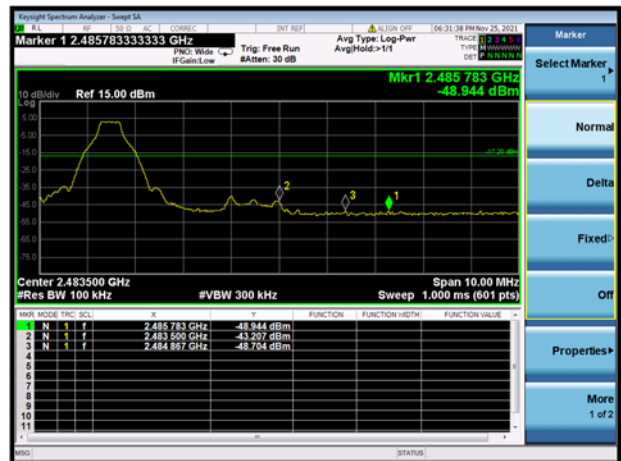
GFSK MIDDLE CHANNEL, SPURIOUS 3 GHz ~ 25 GHz



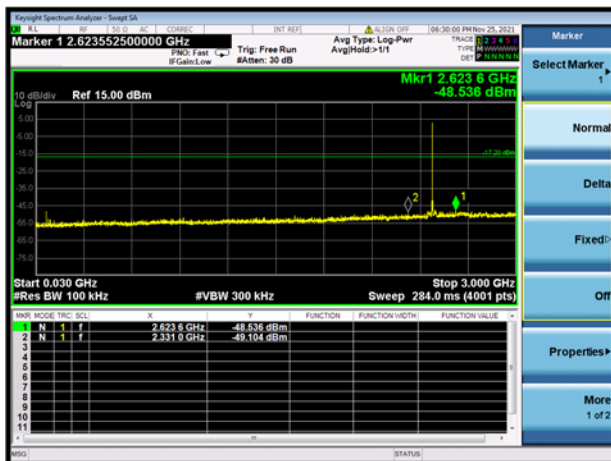
GFSK HIGH CHANNEL, CARRIER LEVEL



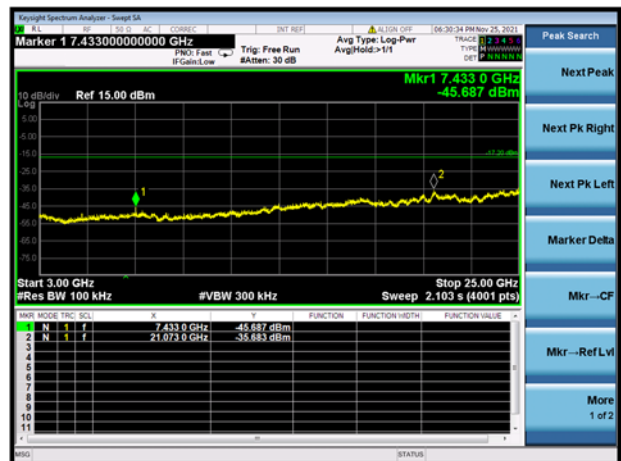
GFSK HIGH CHANNEL, BAND EDGE

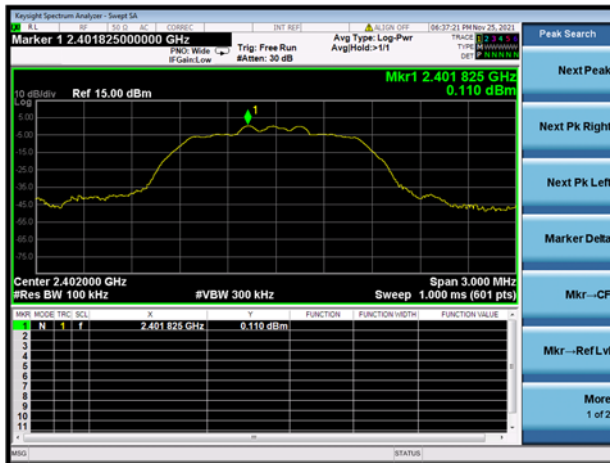
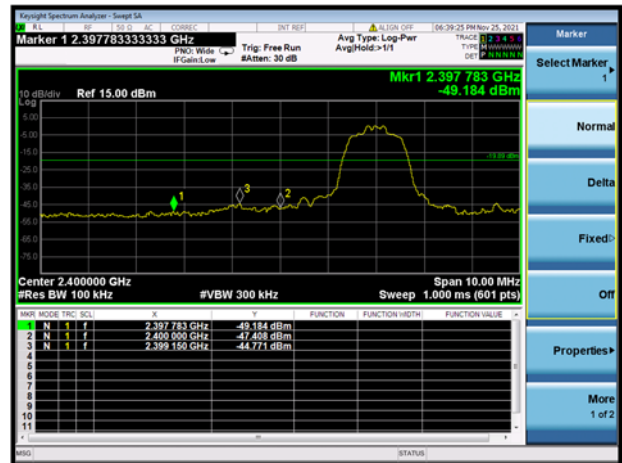
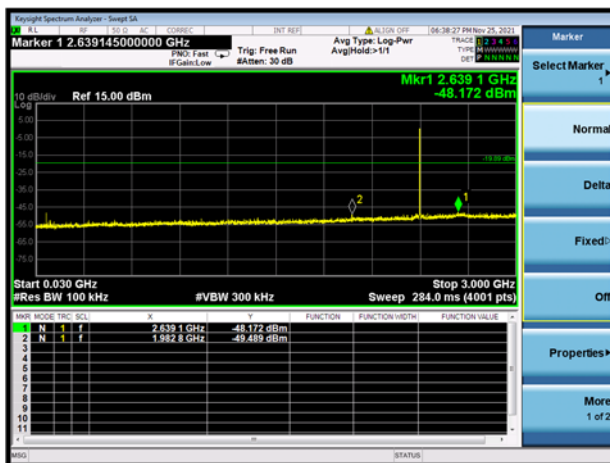


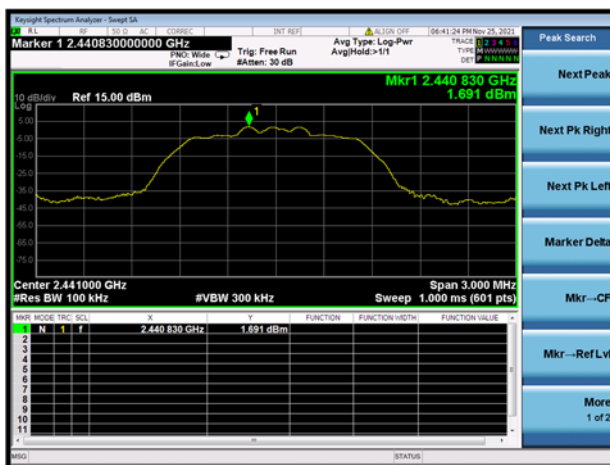
GFSK HIGH CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



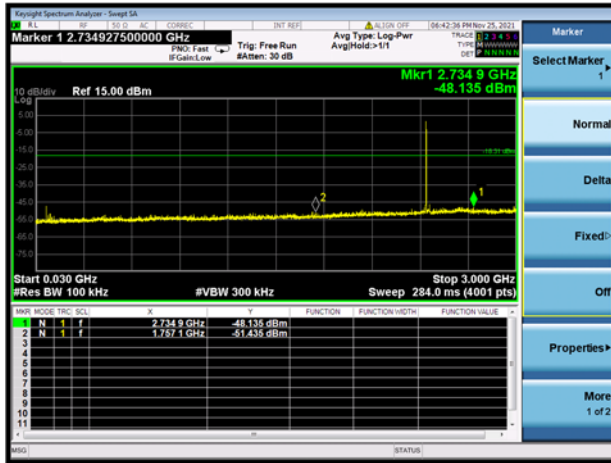
GFSK HIGH CHANNEL, SPURIOUS 3 GHz ~ 25 GHz



$\pi/4$ -DQPSK LOW CHANNEL, CARRIER LEVEL

 $\pi/4$ -DQPSK LOW CHANNEL, BAND EDGE

 $\pi/4$ -DQPSK LOW CHANNEL, SPURIOUS 30 MHz ~ 3 GHz

 $\pi/4$ -DQPSK LOW CHANNEL, SPURIOUS 3 GHz ~ 25 GHz

 $\pi/4$ -DQPSK MIDDLE CHANNEL, CARRIER LEVEL


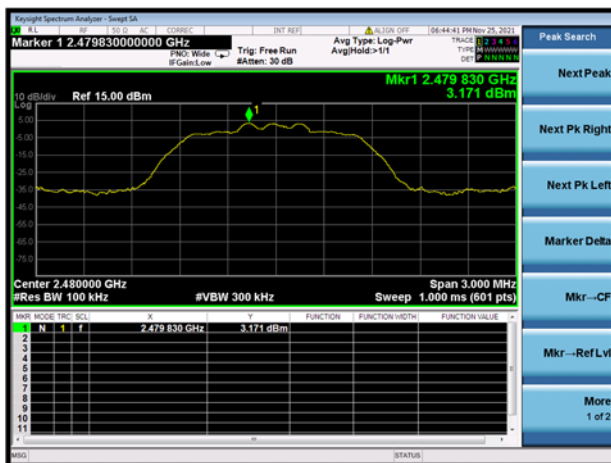
$\pi/4$ -DQPSK MIDDLE CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



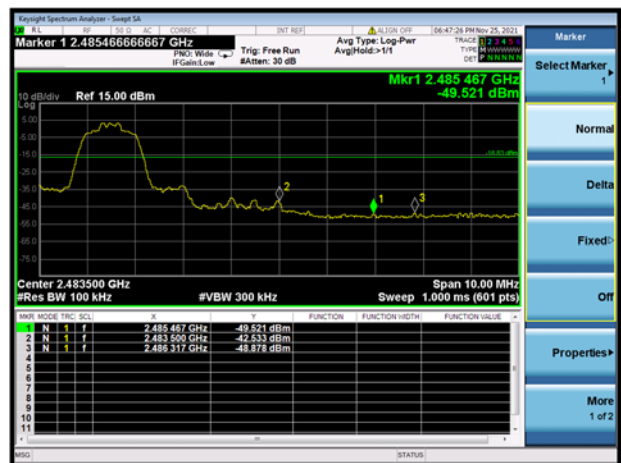
$\pi/4$ -DQPSK MIDDLE CHANNEL, SPURIOUS 3 GHz ~ 25 GHz



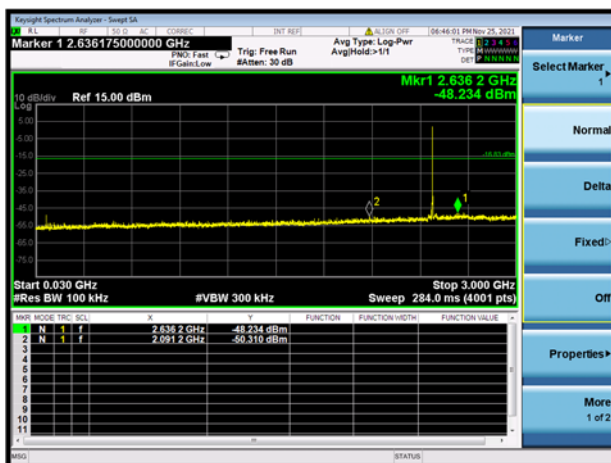
$\pi/4$ -DQPSK HIGH CHANNEL, CARRIER LEVEL



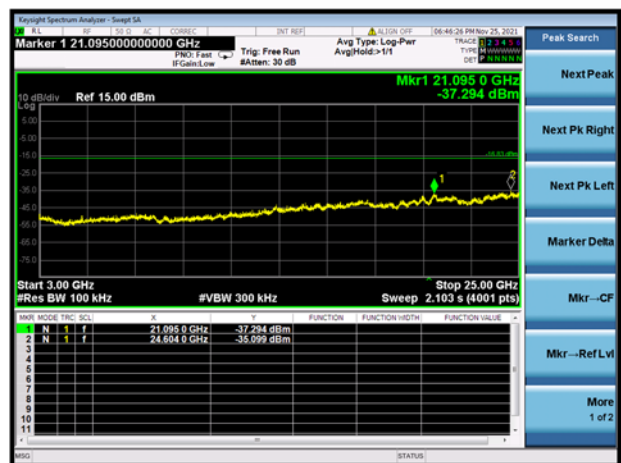
$\pi/4$ -DQPSK HIGH CHANNEL, BAND EDGE



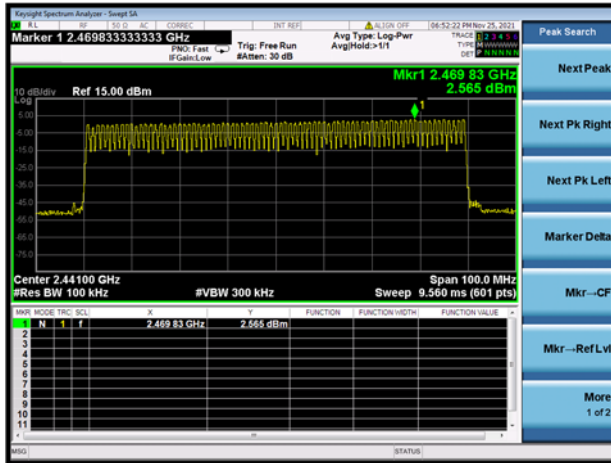
$\pi/4$ -DQPSK HIGH CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



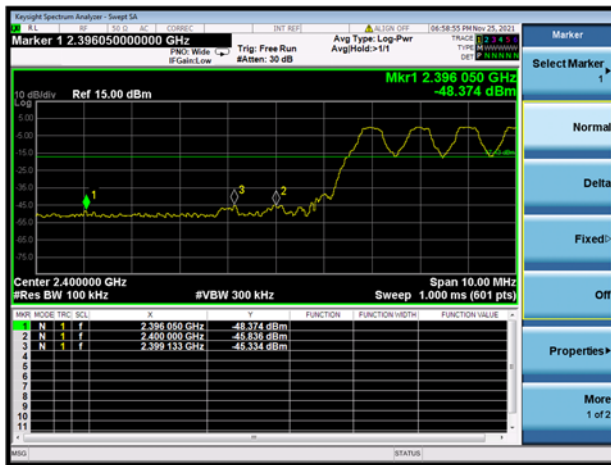
$\pi/4$ -DQPSK HIGH CHANNEL, SPURIOUS 3 GHz ~ 25 GHz



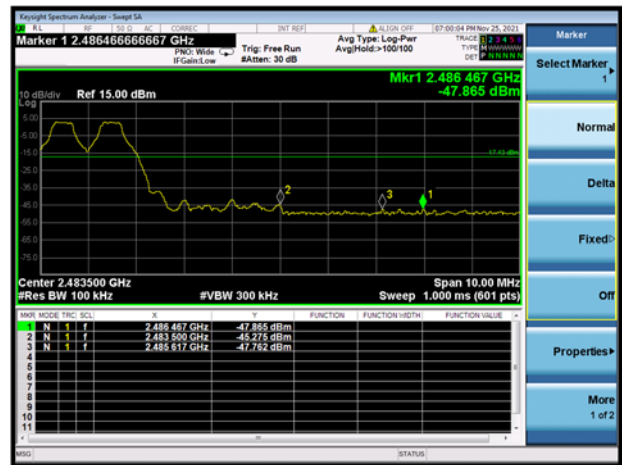
GFSK HOPPING, CARRIER LEVEL



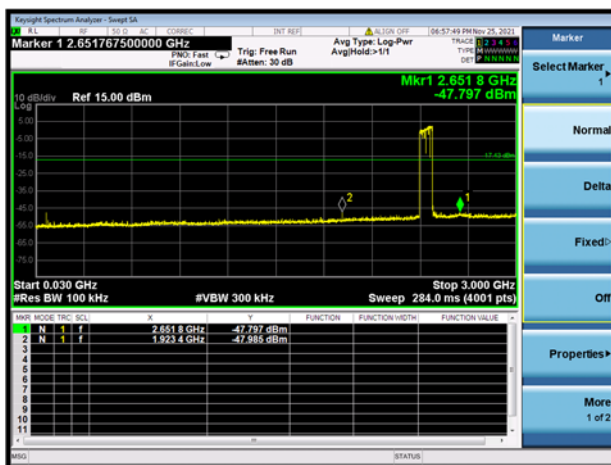
GFSK HOPPING BAND EDGE (LOW)



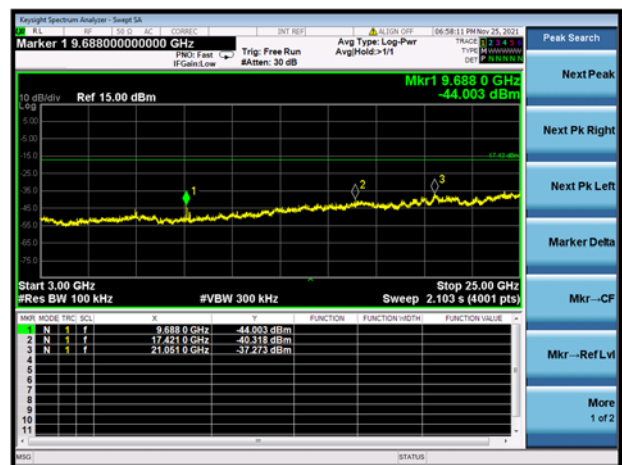
GFSK HOPPING BAND EDGE (HIGH)



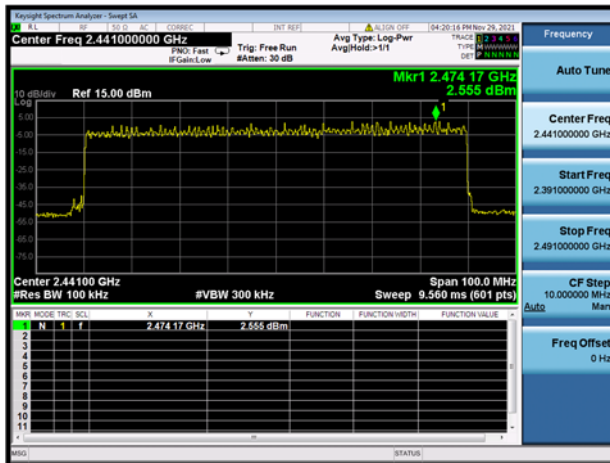
GFSK Hopping Mode, SPURIOUS 30 MHz ~ 3 GHz



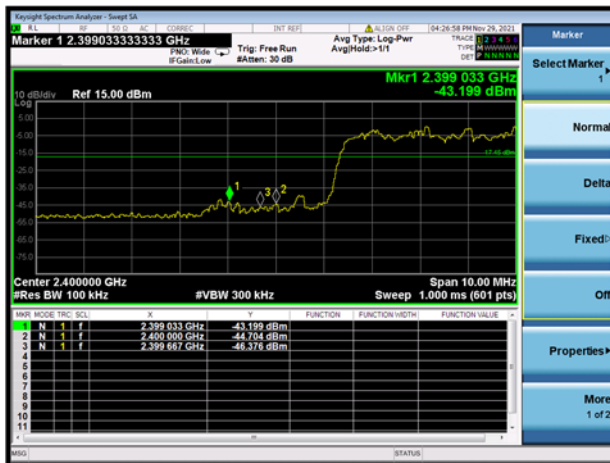
GFSK Hopping Mode, SPURIOUS 30 3GHz ~ 25 GHz



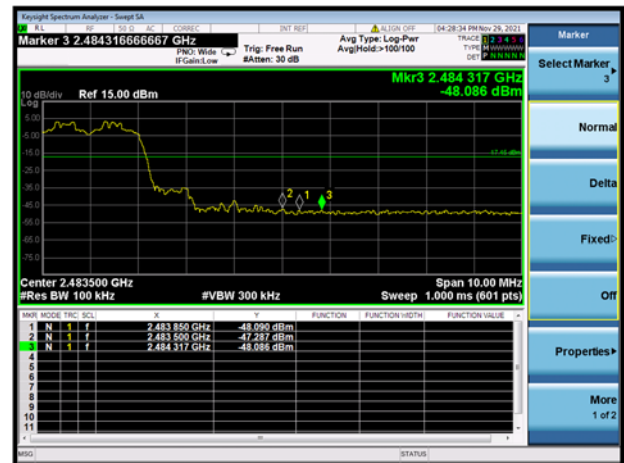
$\pi/4$ -DQPSK HOPPING, CARRIER LEVEL



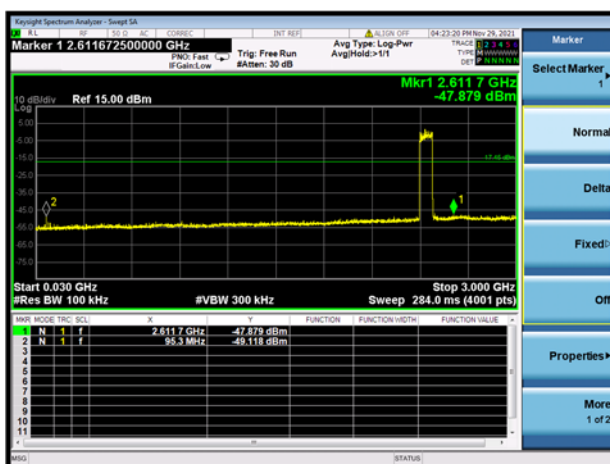
$\pi/4$ -DQPSK Hopping BAND EDGE (LOW)



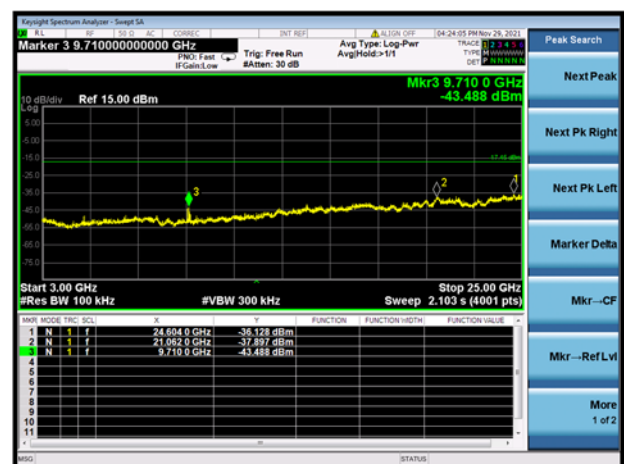
$\pi/4$ -DQPSK Hopping BAND EDGE (HIGH)



$\pi/4$ -DQPSK Hopping Mode, SPURIOUS 30 MHz ~ 3 GHz



$\pi/4$ -DQPSK Hopping Mode, SPURIOUS 30 GHz ~ 25 GHz



A.7 Conducted Emissions

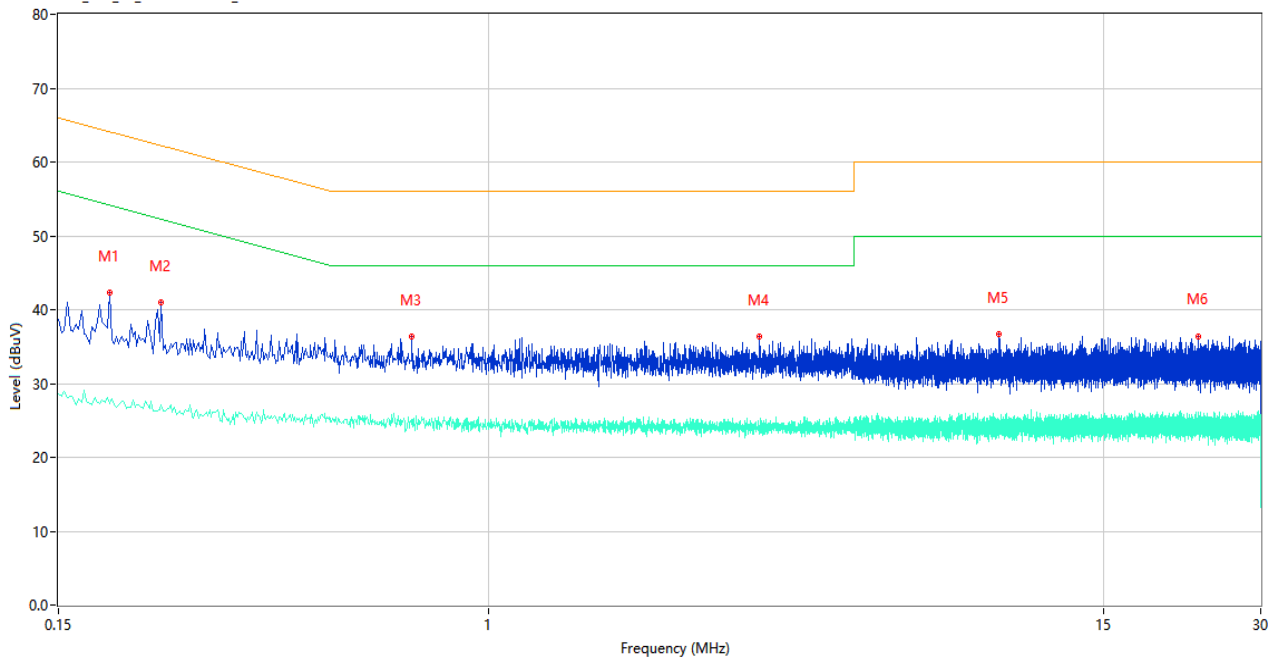
Note¹: The EUT is working in the Normal link mode. All modes have been tested and normal link mode is worst.
 Note²: Devices subject to Part 15 must be tested for all available U.S. voltages and frequencies (such as a nominal 120 VAC, 60 Hz and 240 VAC, 50 Hz) for which the device is capable of operation. 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

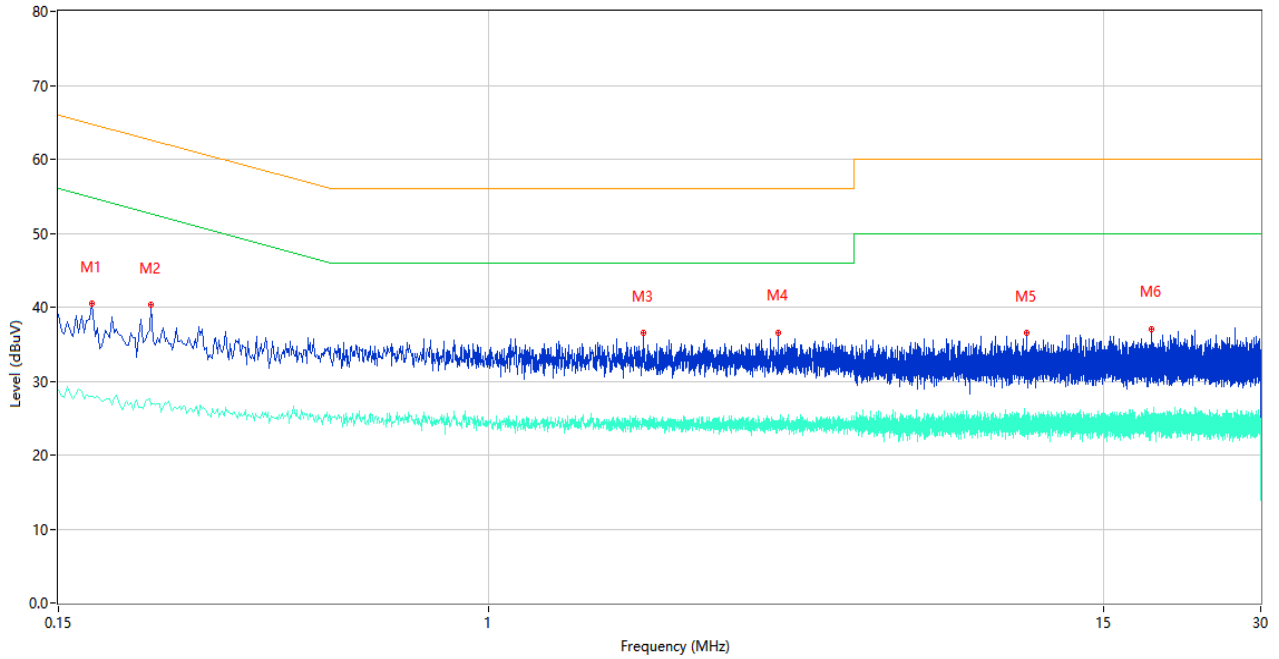
CE Test case_FCC_CE_FCC PART 15B_ Class B



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.188	42.31	10.97	64.12	-21.81	Peak	L	Pass
1**	0.188	27.32	10.97	54.12	-26.80	AV	L	Pass
2	0.236	40.96	10.93	62.24	-21.28	Peak	L	Pass
2**	0.236	27.05	10.93	52.24	-25.19	AV	L	Pass
3	0.712	36.28	10.83	56.00	-19.72	Peak	L	Pass
3**	0.712	25.13	10.83	46.00	-20.87	AV	L	Pass
4	3.296	36.34	10.71	56.00	-19.66	Peak	L	Pass
4**	3.296	24.04	10.71	46.00	-21.96	AV	L	Pass
5	9.446	36.72	10.65	60.00	-23.28	Peak	L	Pass
5**	9.446	25.07	10.65	50.00	-24.93	AV	L	Pass
6	22.838	36.42	10.71	60.00	-23.58	Peak	L	Pass
6**	22.838	25.69	10.71	50.00	-24.31	AV	L	Pass

PHASE N

CE Test case_FCC_CE_FCC PART 15B_Class B



No.	Frequency (MHz)	Results (dBUV)	Factor (dB)	Limit (dBUV)	Over Limit (dB)	Detector	Line	Verdict
1	0.174	40.43	10.98	64.77	-24.34	Peak	N	Pass
1**	0.174	27.93	10.98	54.77	-26.84	AV	N	Pass
2	0.226	40.32	10.94	62.60	-22.28	Peak	N	Pass
2**	0.226	26.76	10.94	52.60	-25.84	AV	N	Pass
3	1.974	36.56	10.75	56.00	-19.44	Peak	N	Pass
3**	1.974	24.99	10.75	46.00	-21.01	AV	N	Pass
4	3.578	36.48	10.71	56.00	-19.52	Peak	N	Pass
4**	3.578	24.04	10.71	46.00	-21.96	AV	N	Pass
5	10.708	36.59	10.66	60.00	-23.41	Peak	N	Pass
5**	10.708	24.54	10.66	50.00	-25.46	AV	N	Pass
6	18.560	36.98	10.69	60.00	-23.02	Peak	N	Pass
6**	18.560	25.26	10.69	50.00	-24.74	AV	N	Pass

A.8 Radiated Spurious Emission

Test Data and Plots

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

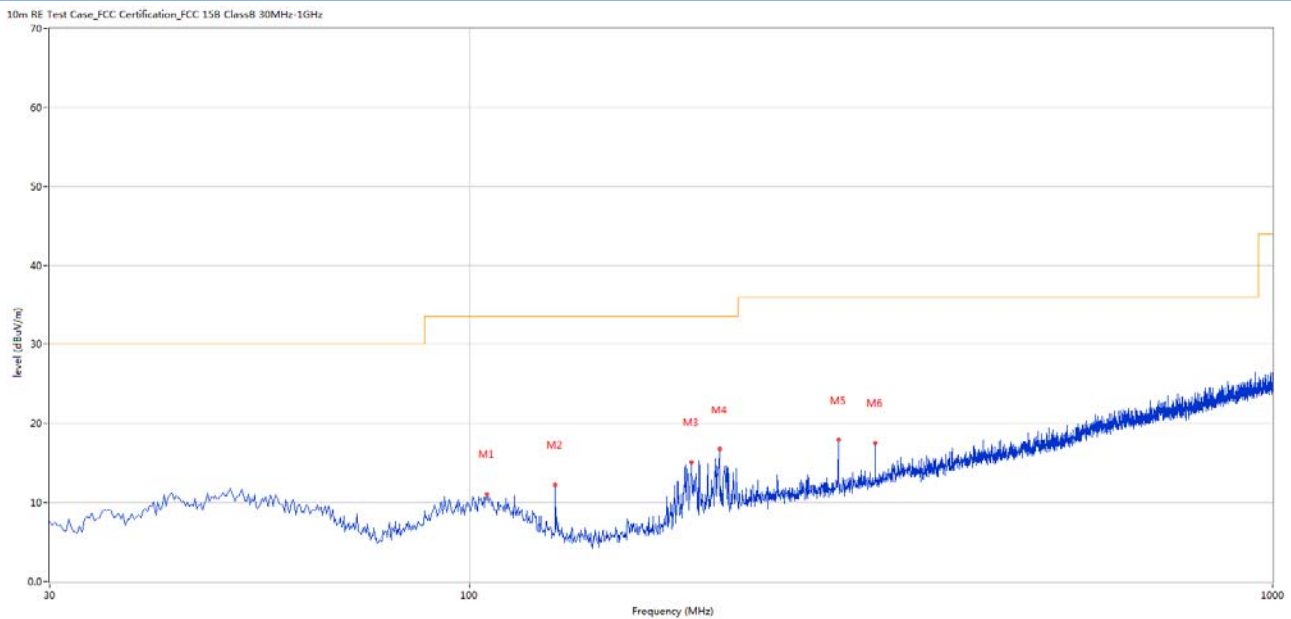
Note²: For the test data above 1 GHz, according the ANSI C63.10-2013, where limits are specified for both average and peak (or quasi-peak) detector functions, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement.

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)

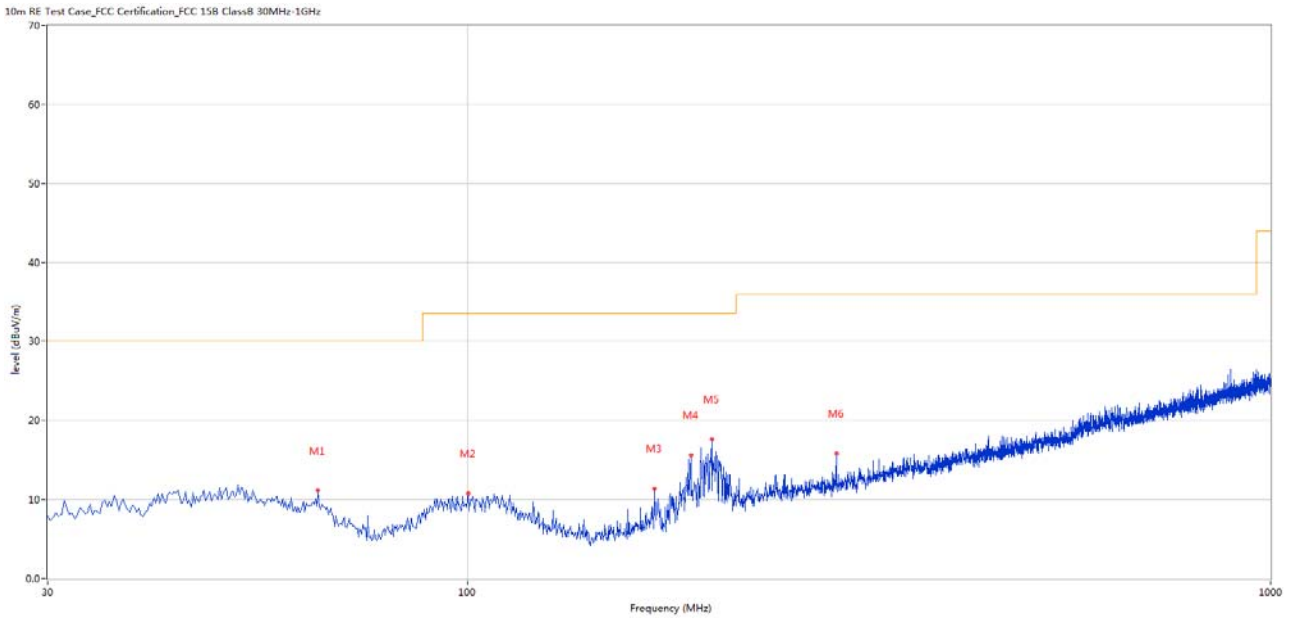
The low frequency, which started from 9 kHz to 30 MHz, was pre-scanned and the result which was 20 dB lower than the limit line per 15.31(o) was not reported.

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	105.156	11.05	-27.77	33.5	-22.45	Peak	356.00	200	Horizontal	Pass
2	127.946	12.21	-31.01	33.5	-21.29	Peak	360.00	200	Horizontal	Pass
3	189.040	15.05	-28.79	33.5	-18.45	Peak	204.00	200	Horizontal	Pass
4	204.799	16.70	-27.82	33.5	-16.80	Peak	360.00	200	Horizontal	Pass
5	287.956	17.88	-25.38	36.0	-18.12	Peak	360.00	200	Horizontal	Pass
6	319.958	17.51	-24.63	36.0	-18.49	Peak	360.00	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	65.154	11.16	-28.36	30.0	-18.84	Peak	73.00	200	Vertical	Pass
2	100.307	10.74	-27.97	33.5	-22.76	Peak	4.00	100	Vertical	Pass
3	171.100	11.40	-30.29	33.5	-22.10	Peak	360.00	200	Vertical	Pass
4	189.768	15.62	-28.66	33.5	-17.88	Peak	65.00	100	Vertical	Pass
5	201.405	17.61	-27.75	33.5	-15.89	Peak	161.00	100	Vertical	Pass
6	287.956	15.83	-25.38	36.0	-20.17	Peak	360.00	200	Vertical	Pass

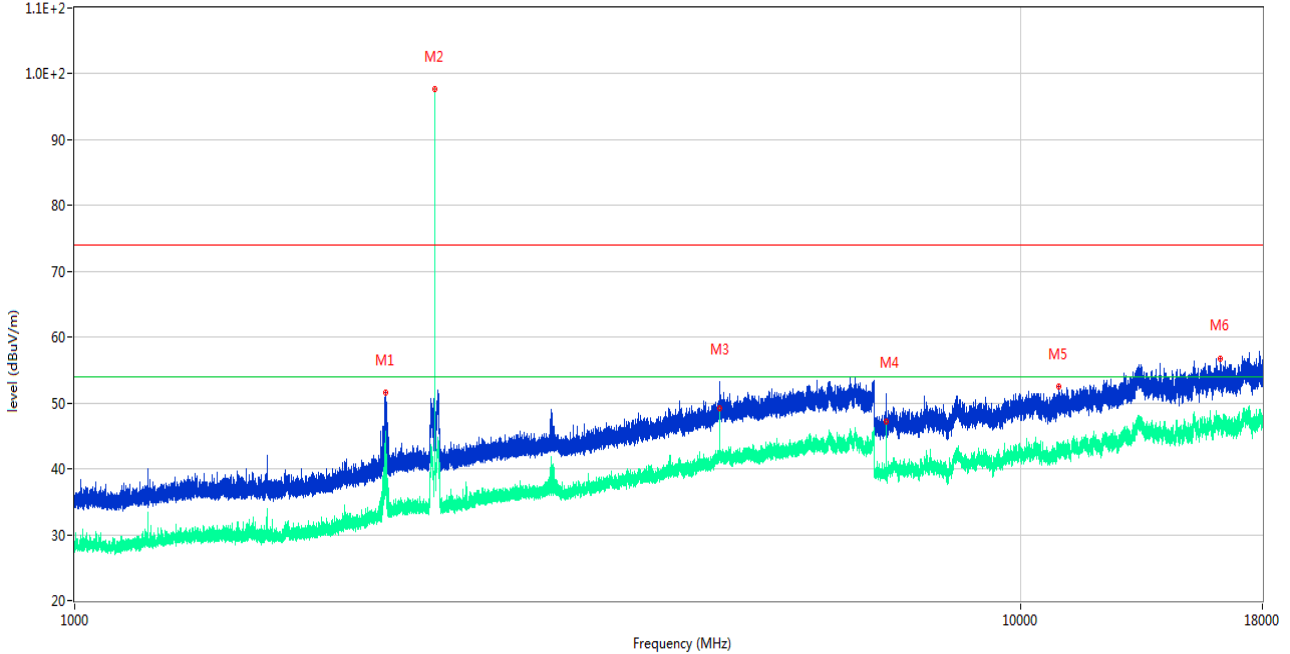
Test Data and Plots (1 GHz ~ 10th Harmonic)

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

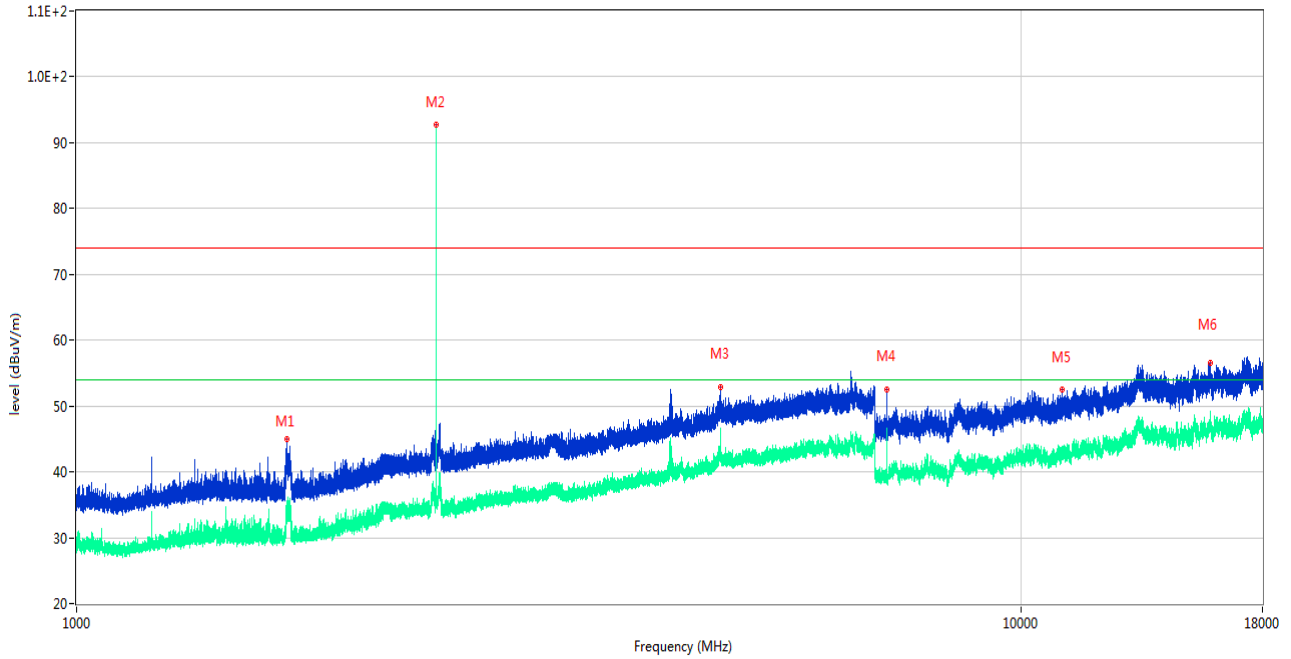
RE Test case_FCC Part 15C_FCC 15.247(2.4G)_1GHz-18GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2128.800	51.62	-13.98	74.0	-22.38	Peak	342.00	150	Horizontal	Pass
1**	2128.800	41.58	-13.98	54.0	-12.42	AV	342.00	150	Horizontal	Pass
2	2402.200	98.00	-12.26	74.0	24.00	Peak	318.00	150	Horizontal	N/A
2**	2402.200	97.50	-12.26	54.0	43.50	AV	318.00	150	Horizontal	N/A
3	4804.400	51.41	-2.78	74.0	-22.59	Peak	21.00	150	Horizontal	Pass
3**	4804.400	49.22	-2.78	54.0	-4.78	AV	21.00	150	Horizontal	Pass
4	7206.138	51.17	-4.33	74.0	-22.83	Peak	102.00	150	Horizontal	Pass
4**	7206.138	47.11	-4.33	54.0	-6.89	AV	102.00	150	Horizontal	Pass
5	10965.775	52.47	-0.43	74.0	-21.53	Peak	31.00	150	Horizontal	Pass
5**	10965.775	42.06	-0.43	54.0	-11.94	AV	31.00	150	Horizontal	Pass
6	16233.113	56.72	1.33	74.0	-17.28	Peak	98.00	150	Horizontal	Pass
6**	16233.113	46.36	1.33	54.0	-7.64	AV	98.00	150	Horizontal	Pass

GFSK LOW CHANNEL 1 GHz to 18 GHz, ANT V

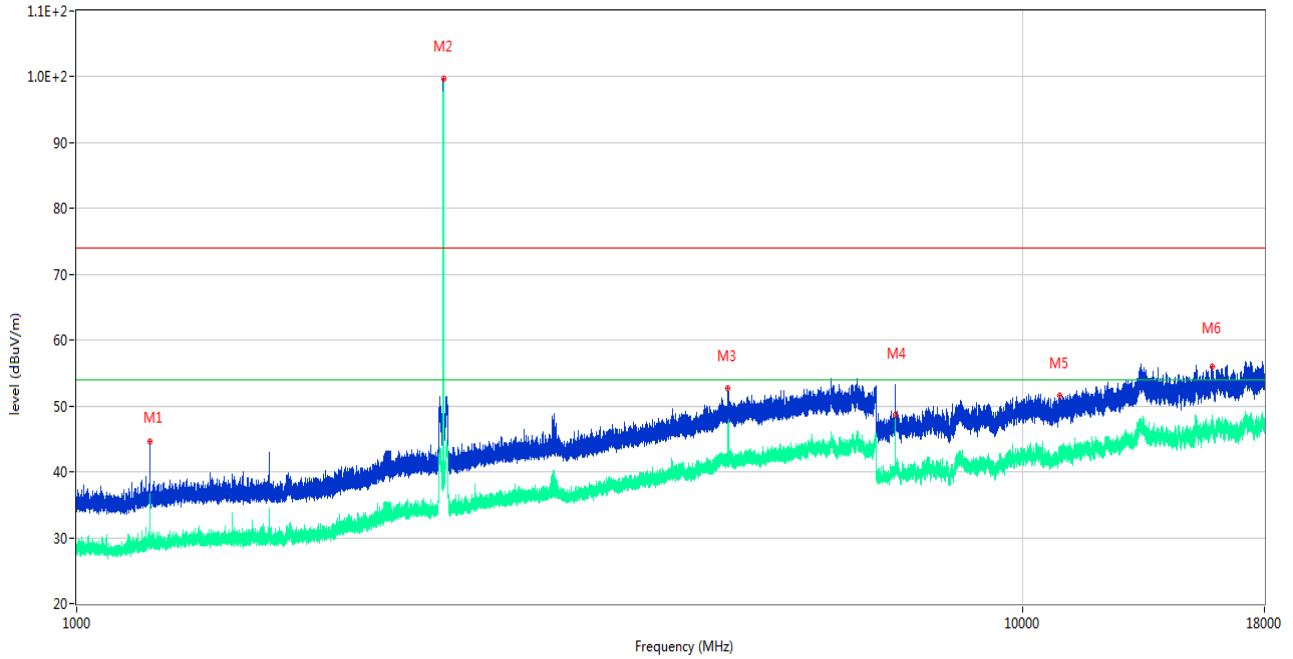
RE Test case_FCC Part 15C_FCC 15.247(2.4G)_1GHz-18GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1669.100	44.98	-17.39	74.0	-29.02	Peak	311.00	150	Vertical	Pass
1**	1669.100	33.43	-17.39	54.0	-20.57	AV	311.00	150	Vertical	Pass
2	2401.700	92.80	-12.26	74.0	18.80	Peak	112.00	150	Vertical	N/A
2**	2401.700	91.13	-12.26	54.0	37.13	AV	112.00	150	Vertical	N/A
3	4800.200	52.79	-2.55	74.0	-21.21	Peak	163.00	150	Vertical	Pass
3**	4800.200	44.73	-2.55	54.0	-9.27	AV	163.00	150	Vertical	Pass
4	7205.562	52.51	-4.29	74.0	-21.49	Peak	360.00	150	Vertical	Pass
4**	7205.562	43.65	-4.29	54.0	-10.35	AV	360.00	150	Vertical	Pass
5	11034.200	52.60	-0.58	74.0	-21.40	Peak	360.00	150	Vertical	Pass
5**	11034.200	43.38	-0.58	54.0	-10.62	AV	360.00	150	Vertical	Pass
6	15854.325	56.56	1.21	74.0	-17.44	Peak	15.00	150	Vertical	Pass
6**	15854.325	47.28	1.21	54.0	-6.72	AV	15.00	150	Vertical	Pass

GFSK MIDDLE CHANNEL 1 GHz to 18 GHz, ANT H

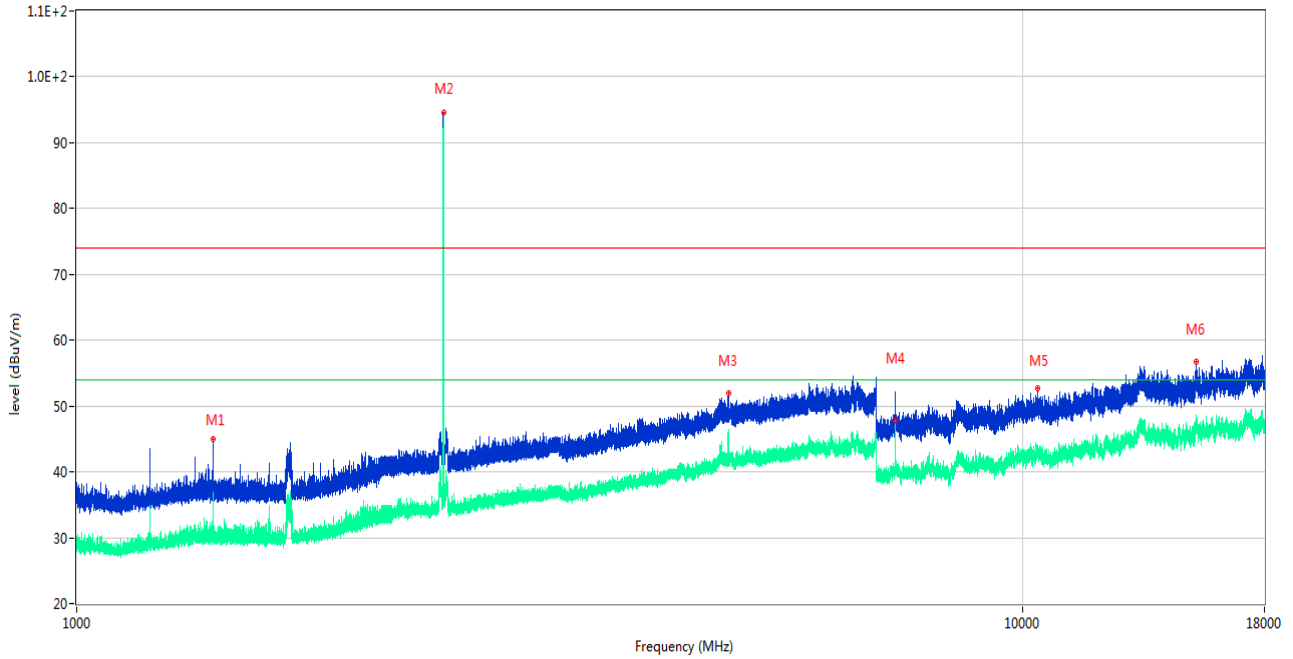
RE Test case_FCC Part 15C_FCC 15.247(2.4G)_1GHz-18GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1194.200	44.67	-17.87	74.0	-29.33	Peak	0.00	150	Horizontal	Pass
1**	1194.200	28.58	-17.87	54.0	-25.42	AV	0.00	150	Horizontal	Pass
2	2440.700	99.66	-12.78	74.0	25.66	Peak	31.00	150	Horizontal	N/A
2**	2440.700	98.35	-12.78	54.0	44.35	AV	31.00	150	Horizontal	N/A
3	4881.800	52.73	-3.43	74.0	-21.27	Peak	227.00	150	Horizontal	Pass
3**	4881.800	47.30	-3.43	54.0	-6.70	AV	227.00	150	Horizontal	Pass
4	7323.150	52.75	-3.60	74.0	-21.25	Peak	67.00	150	Horizontal	Pass
4**	7323.150	48.63	-3.60	54.0	-5.37	AV	67.00	150	Horizontal	Pass
5	10937.888	51.64	-0.04	74.0	-22.36	Peak	244.00	150	Horizontal	Pass
5**	10937.888	43.40	-0.04	54.0	-10.60	AV	244.00	150	Horizontal	Pass
6	15855.375	56.02	1.17	74.0	-17.98	Peak	360.00	150	Horizontal	Pass
6**	15855.375	46.60	1.17	54.0	-7.40	AV	360.00	150	Horizontal	Pass

GFSK MIDDLE CHANNEL 1 GHz to 18 GHz, ANT V

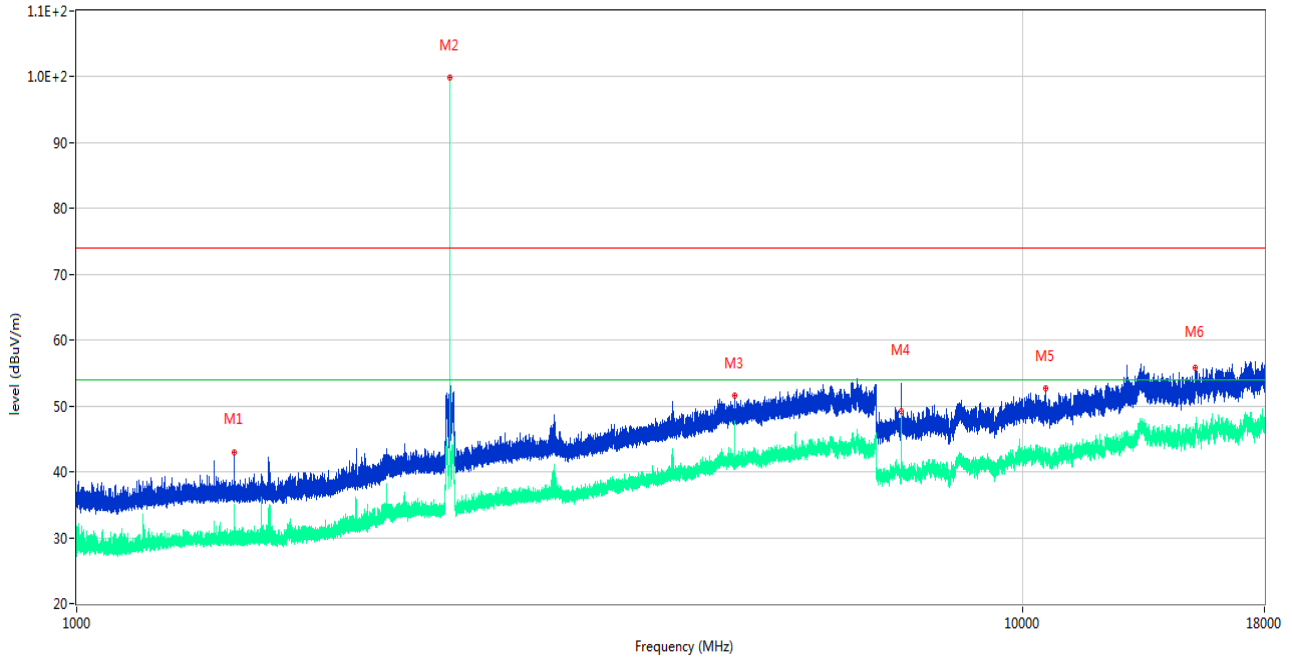
RE Test case_FCC Part 15C_FCC 15.247(2.4G)_1GHz-18GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1394.300	44.91	-17.58	74.0	-29.09	Peak	290.00	150	Vertical	Pass
1**	1394.300	30.29	-17.58	54.0	-23.71	AV	290.00	150	Vertical	Pass
2	2440.700	94.56	-12.78	74.0	20.56	Peak	109.00	150	Vertical	N/A
2**	2440.700	92.51	-12.78	54.0	38.51	AV	109.00	150	Vertical	N/A
3	4882.000	51.99	-3.42	74.0	-22.01	Peak	200.00	150	Vertical	Pass
3**	4882.000	44.96	-3.42	54.0	-9.04	AV	200.00	150	Vertical	Pass
4	7323.438	50.99	-3.60	74.0	-23.01	Peak	193.00	150	Vertical	Pass
4**	7323.438	47.74	-3.60	54.0	-6.26	AV	193.00	150	Vertical	Pass
5	10372.950	52.76	0.16	74.0	-21.24	Peak	175.00	150	Vertical	Pass
5**	10372.950	43.34	0.16	54.0	-10.66	AV	175.00	150	Vertical	Pass
6	15245.062	56.66	0.88	74.0	-17.34	Peak	301.00	150	Vertical	Pass
6**	15245.062	46.75	0.88	54.0	-7.25	AV	301.00	150	Vertical	Pass

GFSK HIGH CHANNEL 1 GHz to 18 GHz, ANT H

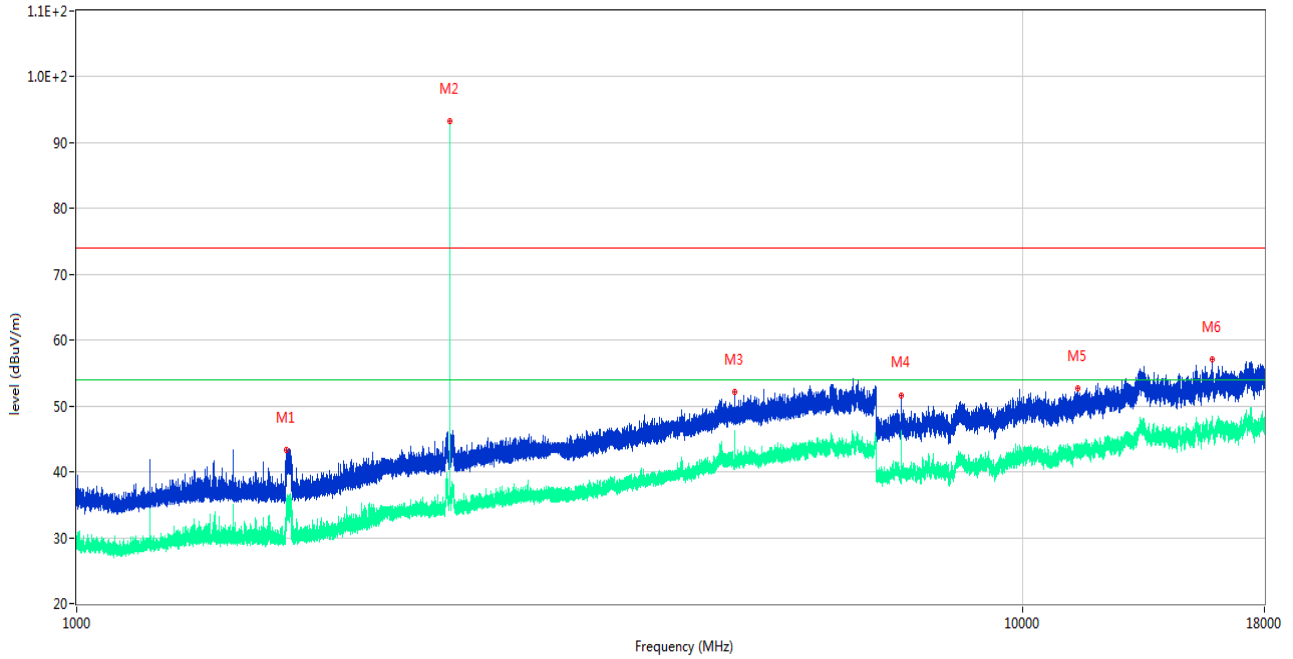
RE Test case_FCC Part 15C_FCC 15.247(2.4G)_1GHz-18GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1465.600	43.02	-17.57	74.0	-30.98	Peak	239.00	150	Horizontal	Pass
1**	1465.600	29.42	-17.57	54.0	-24.58	AV	239.00	150	Horizontal	Pass
2	2479.700	99.84	-12.43	74.0	25.84	Peak	28.00	150	Horizontal	N/A
2**	2479.700	98.09	-12.43	54.0	44.09	AV	28.00	150	Horizontal	N/A
3	4959.800	51.51	-3.30	74.0	-22.49	Peak	66.00	150	Horizontal	Pass
3**	4959.800	45.74	-3.30	54.0	-8.26	AV	66.00	150	Horizontal	Pass
4	7440.163	52.35	-4.36	74.0	-21.65	Peak	66.00	150	Horizontal	Pass
4**	7440.163	49.19	-4.36	54.0	-4.81	AV	66.00	150	Horizontal	Pass
5	10560.975	52.61	-0.72	74.0	-21.39	Peak	119.00	150	Horizontal	Pass
5**	10560.975	42.26	-0.72	54.0	-11.74	AV	119.00	150	Horizontal	Pass
6	15200.700	55.84	0.65	74.0	-18.16	Peak	244.00	150	Horizontal	Pass
6**	15200.700	46.52	0.65	54.0	-7.48	AV	244.00	150	Horizontal	Pass

GFSK HIGH CHANNEL 1 GHz to 18 GHz, ANT V

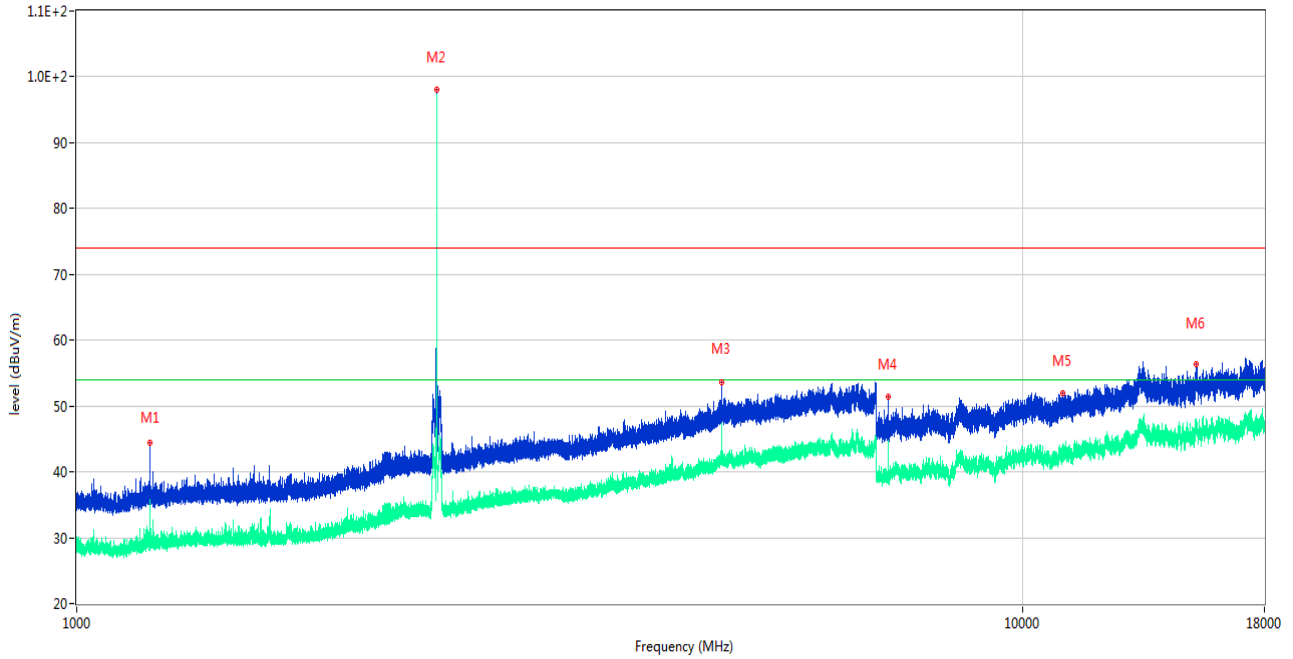
RE Test case_FCC Part 15C_FCC 15.247(2.4G)_1GHz-18GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1663.700	43.32	-17.52	74.0	-30.68	Peak	327.00	150	Vertical	Pass
1**	1663.700	31.53	-17.52	54.0	-22.47	AV	327.00	150	Vertical	Pass
2	2479.700	93.29	-12.43	74.0	19.29	Peak	111.00	150	Vertical	N/A
2**	2479.700	91.91	-12.43	54.0	37.91	AV	111.00	150	Vertical	N/A
3	4959.400	52.06	-3.29	74.0	-21.94	Peak	74.00	150	Vertical	Pass
3**	4959.400	43.35	-3.29	54.0	-10.65	AV	74.00	150	Vertical	Pass
4	7439.300	51.58	-4.37	74.0	-22.42	Peak	123.00	150	Vertical	Pass
4**	7439.300	44.37	-4.37	54.0	-9.63	AV	123.00	150	Vertical	Pass
5	11429.800	52.67	-0.08	74.0	-21.33	Peak	161.00	150	Vertical	Pass
5**	11429.800	42.49	-0.08	54.0	-11.51	AV	161.00	150	Vertical	Pass
6	15851.700	57.03	1.28	74.0	-16.97	Peak	0.00	150	Vertical	Pass
6**	15851.700	47.21	1.28	54.0	-6.79	AV	0.00	150	Vertical	Pass

π/4-DQPSK LOW CHANNEL 1 GHz to 18 GHz, ANT H

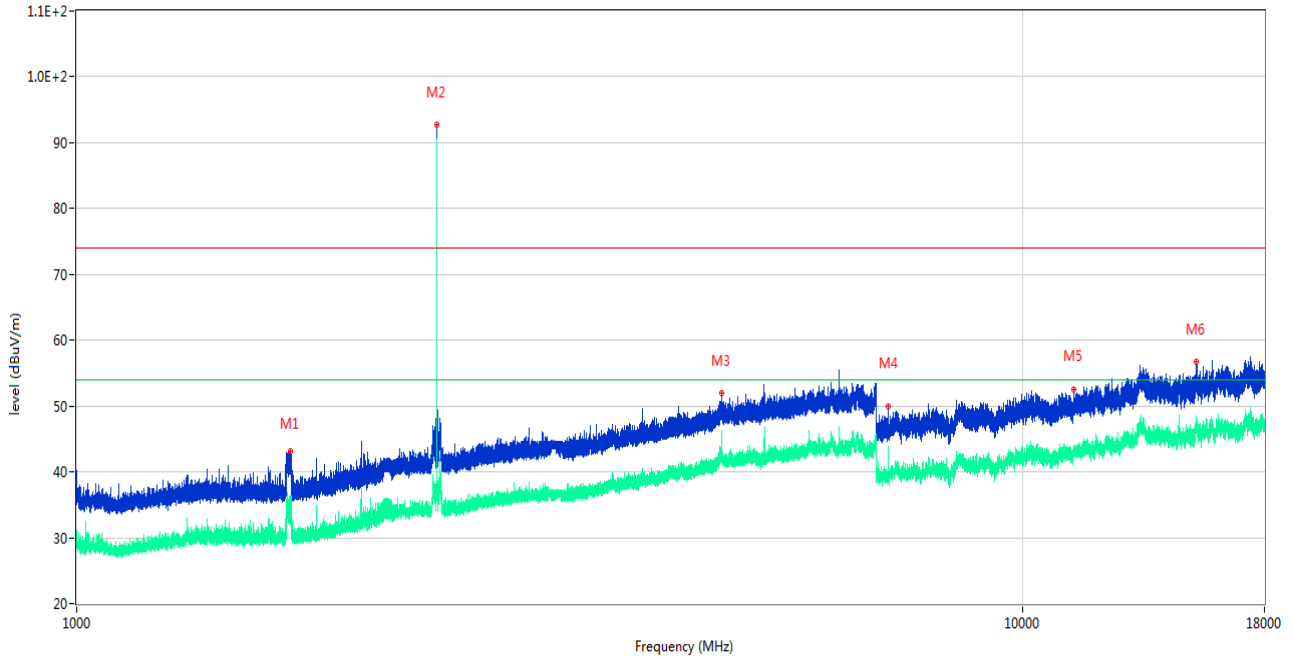
RE Test case_FCC Part 15C_FCC 15.247(2.4G)_1GHz-18GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1196.300	44.48	-17.93	74.0	-29.52	Peak	36.00	150	Horizontal	Pass
1**	1196.300	31.54	-17.93	54.0	-22.46	AV	36.00	150	Horizontal	Pass
2	2402.000	97.97	-12.26	74.0	23.97	Peak	318.00	150	Horizontal	N/A
2**	2402.000	97.05	-12.26	54.0	43.05	AV	318.00	150	Horizontal	N/A
3	4803.600	53.69	-2.71	74.0	-20.31	Peak	144.00	150	Horizontal	Pass
3**	4803.600	45.30	-2.71	54.0	-8.70	AV	144.00	150	Horizontal	Pass
4	7205.275	51.34	-4.26	74.0	-22.66	Peak	360.00	150	Horizontal	Pass
4**	7205.275	44.57	-4.26	54.0	-9.43	AV	360.00	150	Horizontal	Pass
5	11020.401	51.89	-0.75	74.0	-22.11	Peak	51.00	150	Horizontal	Pass
5**	11020.401	44.20	-0.75	54.0	-9.80	AV	51.00	150	Horizontal	Pass
6	15233.776	56.44	0.99	74.0	-17.56	Peak	29.00	150	Horizontal	Pass
6**	15233.776	46.98	0.99	54.0	-7.02	AV	29.00	150	Horizontal	Pass

π/4-DQPSK LOW CHANNEL 1 GHz to 18 GHz, ANT V

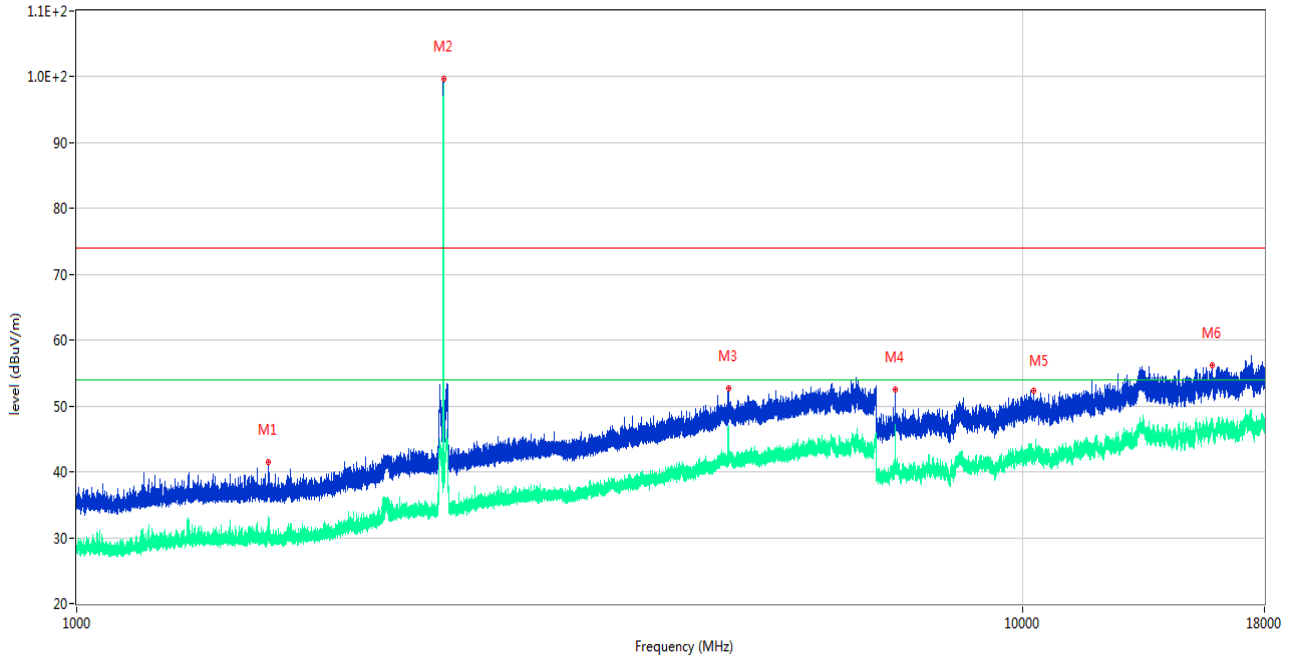
RE Test case_FCC Part 15C_FCC 15.247(2.4G)_1GHz-18GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1683.200	43.11	-17.36	74.0	-30.89	Peak	312.00	150	Vertical	Pass
1**	1683.200	33.01	-17.36	54.0	-20.99	AV	312.00	150	Vertical	Pass
2	2401.800	92.67	-12.26	74.0	18.67	Peak	109.00	150	Vertical	N/A
2**	2401.800	89.51	-12.26	54.0	35.51	AV	109.00	150	Vertical	N/A
3	4804.200	52.05	-2.76	74.0	-21.95	Peak	126.00	150	Vertical	Pass
3**	4804.200	46.23	-2.76	54.0	-7.77	AV	126.00	150	Vertical	Pass
4	7205.275	49.94	-4.26	74.0	-24.06	Peak	360.00	150	Vertical	Pass
4**	7205.275	40.95	-4.26	54.0	-13.05	AV	360.00	150	Vertical	Pass
5	11315.375	52.43	0.47	74.0	-21.57	Peak	359.00	150	Vertical	Pass
5**	11315.375	43.46	0.47	54.0	-10.54	AV	359.00	150	Vertical	Pass
6	15237.975	56.80	0.98	74.0	-17.20	Peak	238.00	150	Vertical	Pass
6**	15237.975	47.05	0.98	54.0	-6.95	AV	238.00	150	Vertical	Pass

π/4-DQPSK MIDDLE CHANNEL 1 GHz to 18 GHz, ANT H

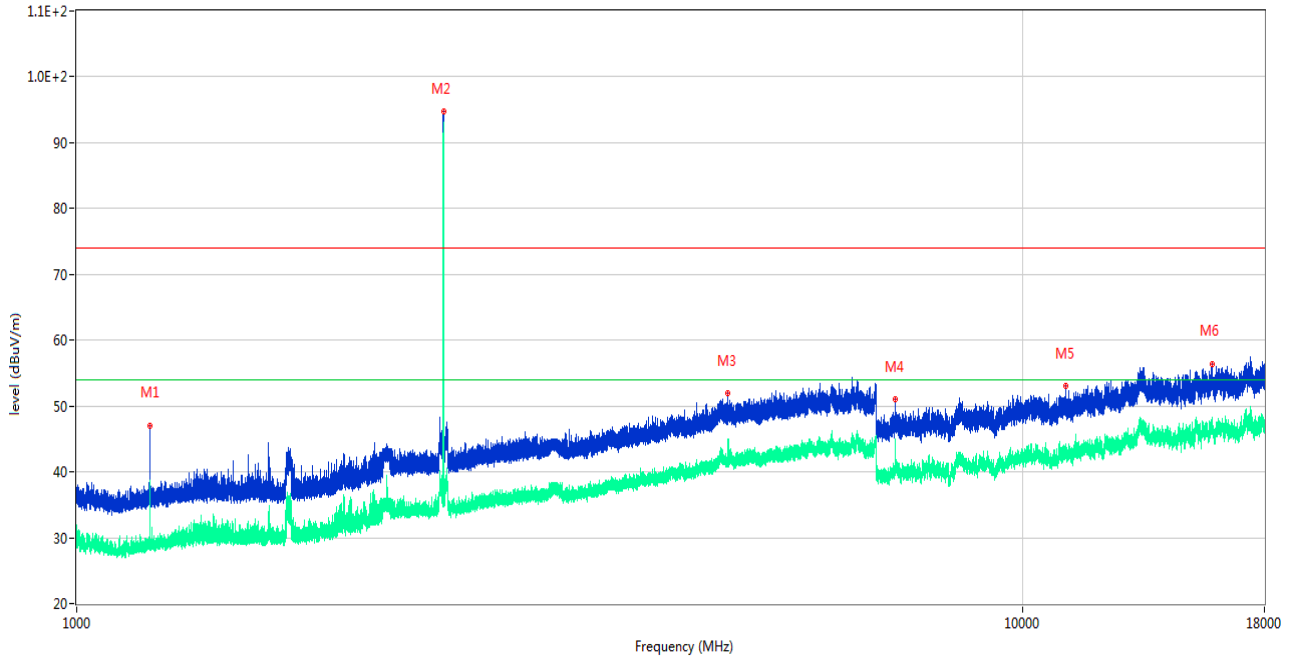
RE Test case_FCC Part 15C_FCC 15.247(2.4G)_1GHz-18GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1594.200	41.45	-17.47	74.0	-32.55	Peak	52.00	150	Horizontal	Pass
1**	1594.200	30.62	-17.47	54.0	-23.38	AV	52.00	150	Horizontal	Pass
2	2440.800	99.64	-12.79	74.0	25.64	Peak	36.00	150	Horizontal	N/A
2**	2440.800	98.09	-12.79	54.0	44.09	AV	36.00	150	Horizontal	N/A
3	4882.000	52.61	-3.42	74.0	-21.39	Peak	227.00	150	Horizontal	Pass
3**	4882.000	47.03	-3.42	54.0	-6.97	AV	227.00	150	Horizontal	Pass
4	7322.862	52.50	-3.61	74.0	-21.50	Peak	69.00	150	Horizontal	Pass
4**	7322.862	47.14	-3.61	54.0	-6.86	AV	69.00	150	Horizontal	Pass
5	10259.963	52.30	0.59	74.0	-21.70	Peak	160.00	150	Horizontal	Pass
5**	10259.963	42.41	0.59	54.0	-11.59	AV	160.00	150	Horizontal	Pass
6	15842.775	56.22	1.40	74.0	-17.78	Peak	0.00	150	Horizontal	Pass
6**	15842.775	47.37	1.40	54.0	-6.63	AV	0.00	150	Horizontal	Pass

π/4-DQPSK MIDDLE CHANNEL 1 GHz to 18 GHz, ANT V

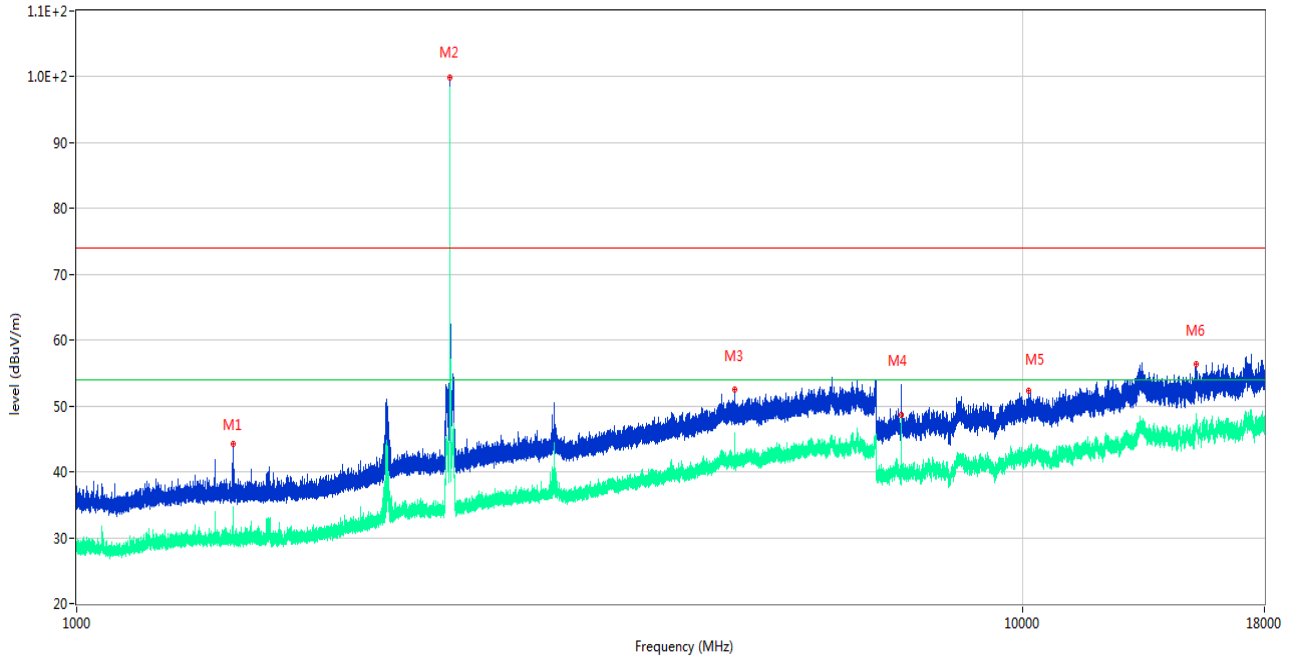
RE Test case_FCC Part 15C_FCC 15.247(2.4G)_1GHz-18GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1196.300	46.93	-17.93	74.0	-27.07	Peak	233.00	150	Vertical	Pass
1**	1196.300	28.99	-17.93	54.0	-25.01	AV	233.00	150	Vertical	Pass
2	2440.700	94.78	-12.78	74.0	20.78	Peak	111.00	150	Vertical	N/A
2**	2440.700	91.76	-12.78	54.0	37.76	AV	111.00	150	Vertical	N/A
3	4881.400	52.03	-3.45	74.0	-21.97	Peak	162.00	150	Vertical	Pass
3**	4881.400	42.71	-3.45	54.0	-11.29	AV	162.00	150	Vertical	Pass
4	7322.862	51.08	-3.61	74.0	-22.92	Peak	182.00	150	Vertical	Pass
4**	7322.862	43.83	-3.61	54.0	-10.17	AV	182.00	150	Vertical	Pass
5	11107.225	53.02	-0.86	74.0	-20.98	Peak	13.00	150	Vertical	Pass
5**	11107.225	44.31	-0.86	54.0	-9.69	AV	13.00	150	Vertical	Pass
6	15847.500	56.45	1.35	74.0	-17.55	Peak	101.00	150	Vertical	Pass
6**	15847.500	46.71	1.35	54.0	-7.29	AV	101.00	150	Vertical	Pass

π/4-DQPSK HIGH CHANNEL 1 GHz to 18 GHz, ANT H

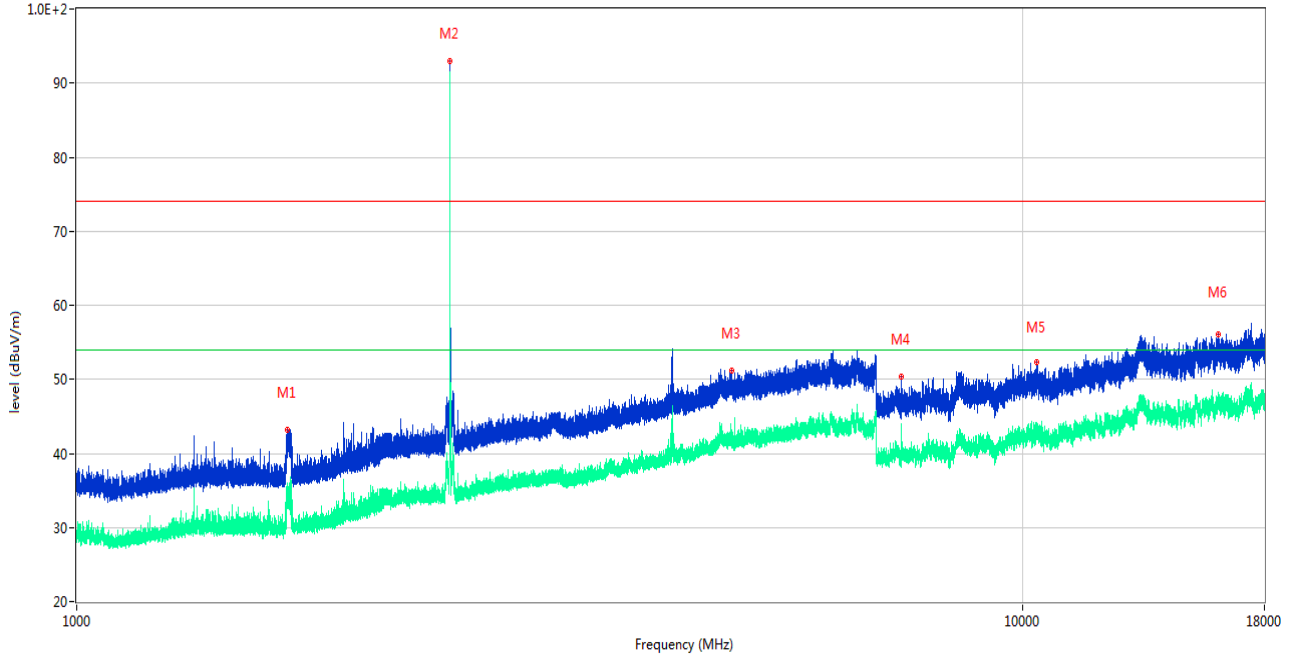
RE Test case_FCC Part 15C_FCC 15.247(2.4G)_1GHz-18GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1462.000	44.31	-17.38	74.0	-29.69	Peak	285.00	150	Horizontal	Pass
1**	1462.000	29.58	-17.38	54.0	-24.42	AV	285.00	150	Horizontal	Pass
2	2479.900	99.85	-12.43	74.0	25.85	Peak	29.00	150	Horizontal	N/A
2**	2479.900	97.93	-12.43	54.0	43.93	AV	29.00	150	Horizontal	N/A
3	4960.200	52.58	-3.28	74.0	-21.42	Peak	64.00	150	Horizontal	Pass
3**	4960.200	45.50	-3.28	54.0	-8.50	AV	64.00	150	Horizontal	Pass
4	7440.163	53.24	-4.36	74.0	-20.76	Peak	140.00	150	Horizontal	Pass
4**	7440.163	48.74	-4.36	54.0	-5.26	AV	140.00	150	Horizontal	Pass
5	10148.125	52.28	0.01	74.0	-21.72	Peak	121.00	150	Horizontal	Pass
5**	10148.125	42.28	0.01	54.0	-11.72	AV	121.00	150	Horizontal	Pass
6	15241.912	56.33	0.92	74.0	-17.67	Peak	0.00	150	Horizontal	Pass
6**	15241.912	47.13	0.92	54.0	-6.87	AV	0.00	150	Horizontal	Pass

π/4-DQPSK HIGH 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)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1671.400	43.17	-17.53	74.0	-30.83	Peak	308.00	150	Vertical	Pass
1**	1671.400	35.92	-17.53	54.0	-18.08	AV	308.00	150	Vertical	Pass
2	2480.000	92.98	-12.43	74.0	18.98	Peak	108.00	150	Vertical	N/A
2**	2480.000	91.43	-12.43	54.0	37.43	AV	108.00	150	Vertical	N/A
3	4929.000	51.26	-2.86	74.0	-22.74	Peak	227.00	150	Vertical	Pass
3**	4929.000	41.44	-2.86	54.0	-12.56	AV	227.00	150	Vertical	Pass
4	7439.587	50.30	-4.38	74.0	-23.70	Peak	120.00	150	Vertical	Pass
4**	7439.587	43.27	-4.38	54.0	-10.73	AV	120.00	150	Vertical	Pass
5	10337.588	52.38	0.08	74.0	-21.62	Peak	174.00	150	Vertical	Pass
5**	10337.588	42.25	0.08	54.0	-11.75	AV	174.00	150	Vertical	Pass
6	16095.037	56.03	1.32	74.0	-17.97	Peak	300.00	150	Vertical	Pass
6**	16095.037	47.46	1.32	54.0	-6.54	AV	300.00	150	Vertical	Pass

A.9 Band Edge (Restricted-band band-edge)

Note¹: The lowest and highest channels are tested to verify the band edge emissions. Please refer to the following the plots for emissions values.

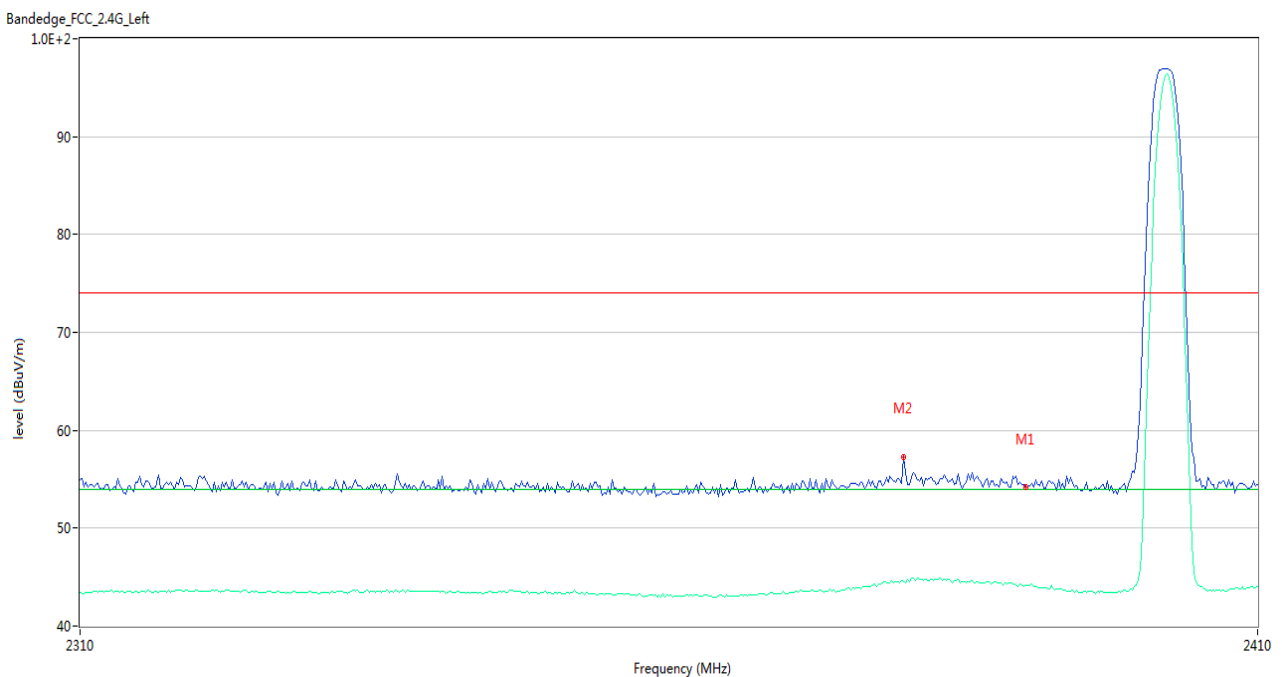
Note²: The test data all are tested in the vertical and horizontal antenna which the trace is max hold. So these plots have shown the worst case.

Note³: 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.

Note⁴: The Level (dBuV/m) has been corrected by factor.

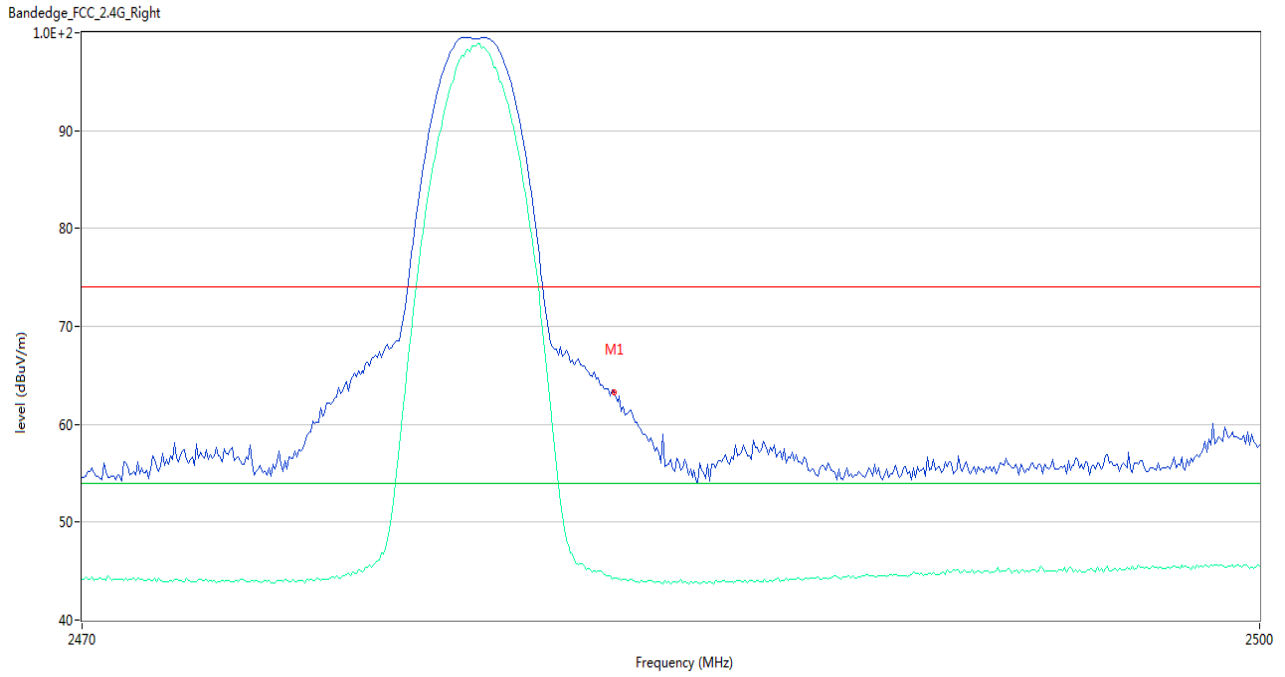
Test Data

GFSK LOW CHANNEL



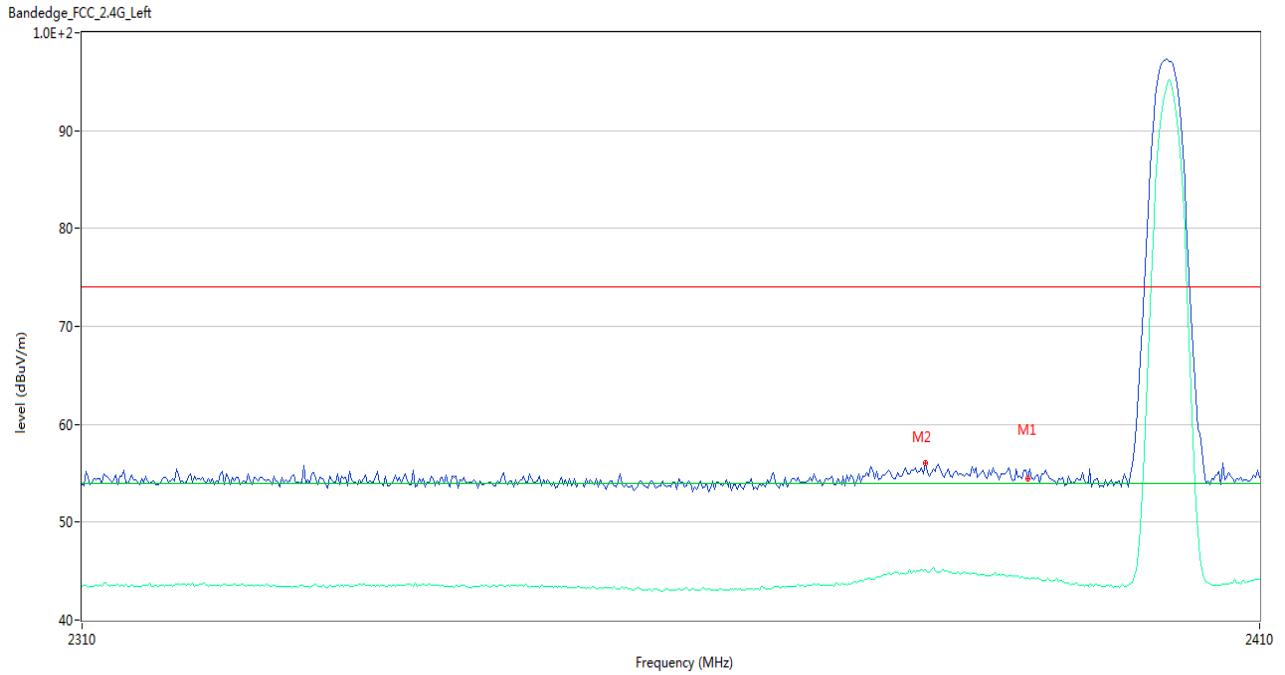
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2390.000	54.16	-0.50	74.0	-19.84	Peak	270.00	150	Horizontal	Pass
1**	2390.000	44.13	-0.50	54.0	-9.87	AV	270.00	150	Horizontal	Pass
2	2379.500	57.25	-0.54	74.0	-16.75	Peak	312.00	150	Horizontal	Pass
2**	2379.500	44.52	-0.54	54.0	-9.48	AV	312.00	150	Horizontal	Pass

GFSK HIGH CHANNEL,

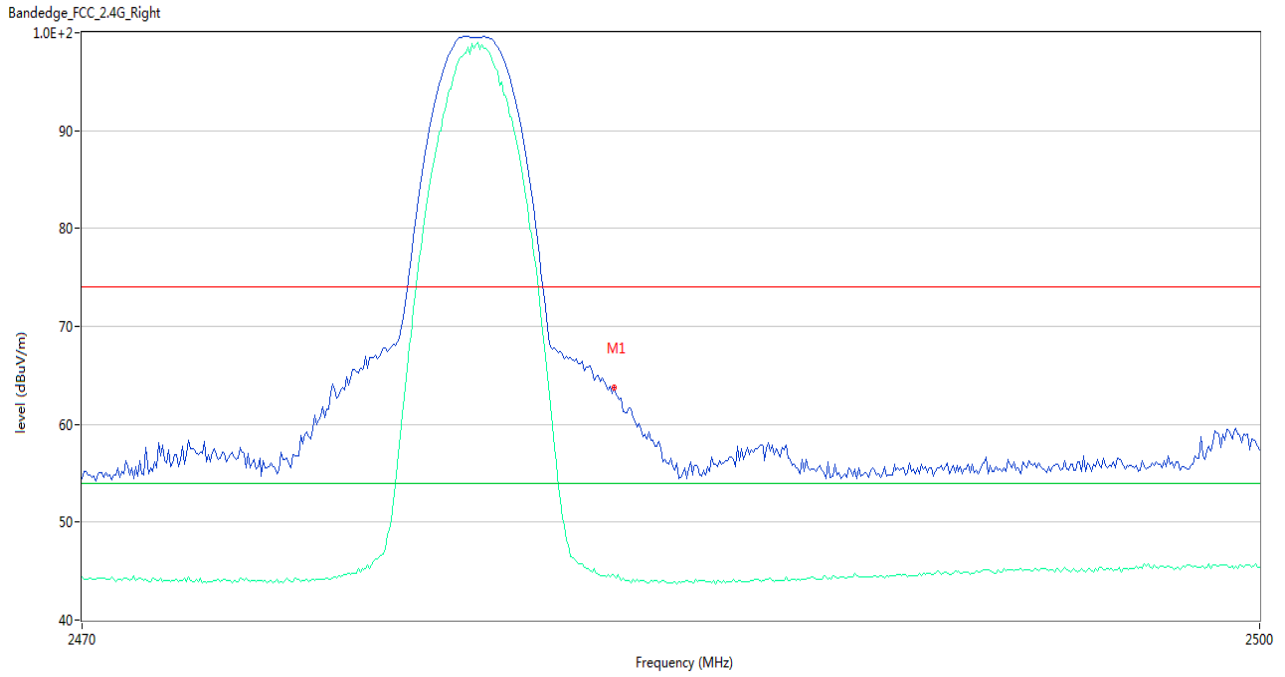


No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2483.500	63.23	-0.36	74.0	-10.77	Peak	21.00	150	Horizontal	Pass
1**	2483.500	44.25	-0.36	54.0	-9.75	AV	21.00	150	Horizontal	Pass

π/4-DQPSK LOW CHANNEL



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2390.000	54.43	-0.50	74.0	-19.57	Peak	334.00	150	Horizontal	Pass
1**	2390.000	44.26	-0.50	54.0	-9.74	AV	334.00	150	Horizontal	Pass
2	2381.167	56.10	-0.57	74.0	-17.90	Peak	280.00	150	Horizontal	Pass
2**	2381.167	45.14	-0.57	54.0	-8.86	AV	280.00	150	Horizontal	Pass

$\pi/4$ -DQPSK HIGH CHANNEL


No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2483.500	63.78	-0.36	74.0	-10.22	Peak	29.00	150	Horizontal	Pass
1**	2483.500	44.56	-0.36	54.0	-9.44	AV	29.00	150	Horizontal	Pass

ANNEX B TEST SETUP PHOTOS

Please refer the document "BL-SZ21B0649-AR.PDF".

ANNEX C EUT EXTERNAL PHOTOS

Please refer the document "BL-SZ21B0649-AW.PDF".

ANNEX D EUT INTERNAL PHOTOS

Please refer the document "BL-SZ21B0649-AI.PDF".

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