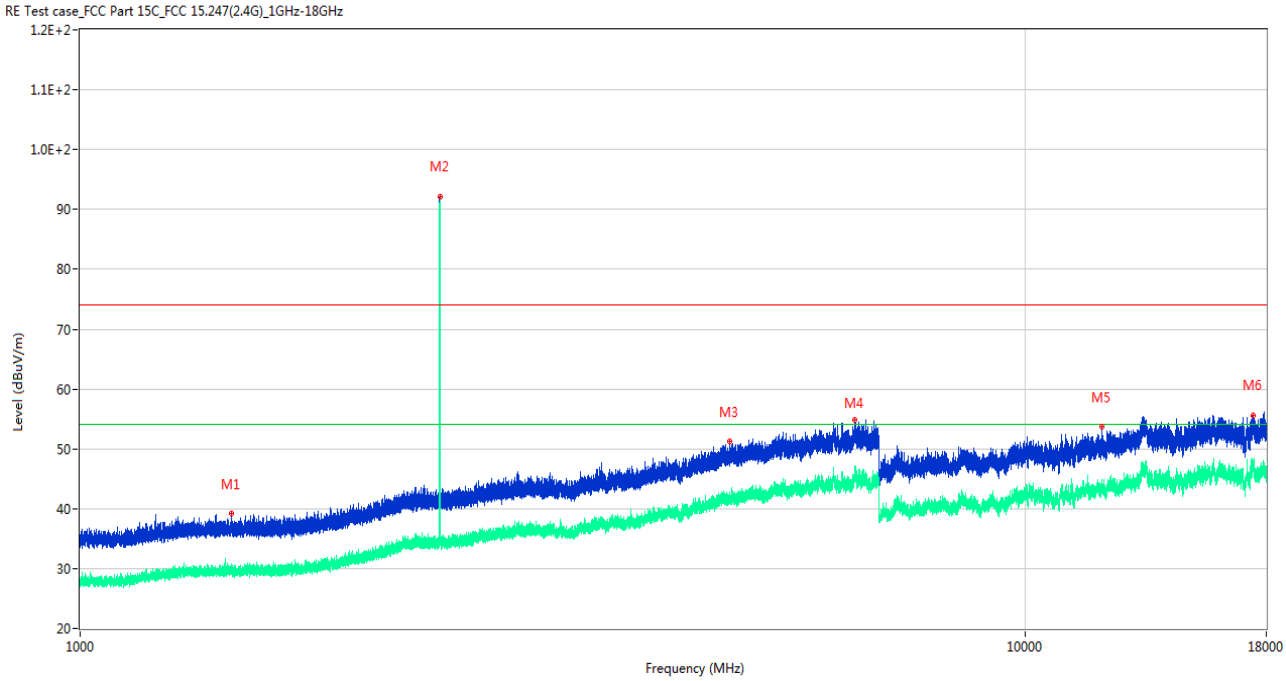
Note 1: The marked spikes near 2400 MHz with circle should be ignored because they are Fundamental signal.

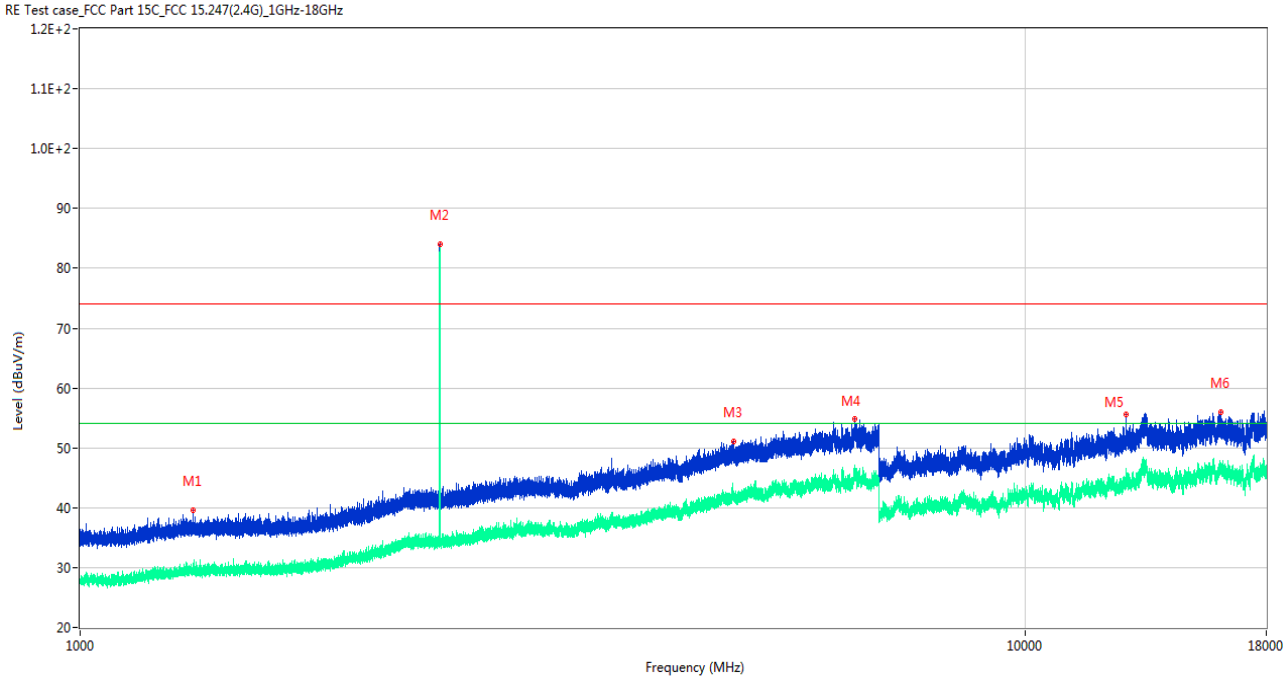
Note 2: The spurious from 18GHz-25GHz is noise only, do not show on the report.

GFSK (BLE 1Mbps) LOW CHANNEL 1 GHz to 18 GHz, ANT H



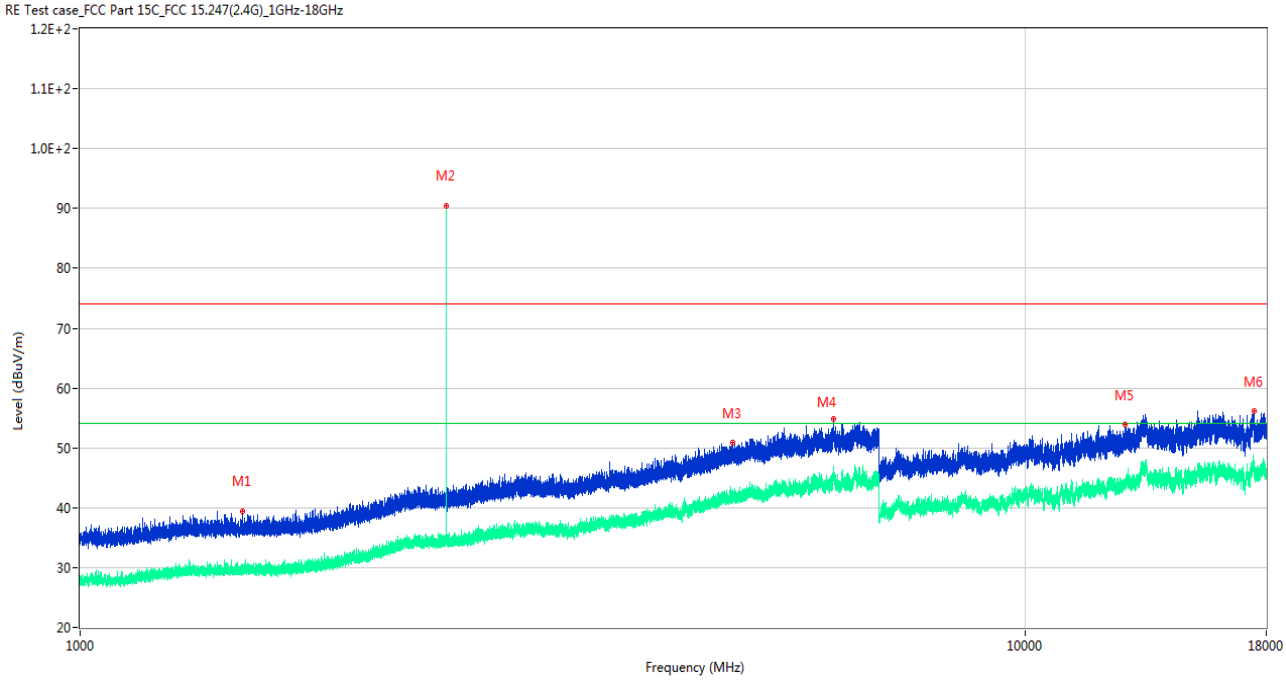
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1444.800	39.12	-17.23	74.0	34.88	Peak	14.00	400	Horizontal	Pass
1**	1444.800	29.61	-17.23	54.0	24.39	AV	14.00	400	Horizontal	Pass
2	2402.300	92.18	-12.41	74.0	-18.18	Peak	110.00	200	Horizontal	N/A
2**	2402.300	91.66	-12.41	54.0	-37.66	AV	110.00	200	Horizontal	N/A
3	4870.400	51.21	-3.19	74.0	22.79	Peak	134.00	200	Horizontal	Pass
3**	4870.400	41.60	-3.19	54.0	12.40	AV	134.00	200	Horizontal	Pass
4	6606.600	54.90	1.45	74.0	19.10	Peak	222.00	100	Horizontal	Pass
4**	6606.600	46.34	1.45	54.0	7.66	AV	222.00	100	Horizontal	Pass
5	12059.713	53.64	0.94	74.0	20.36	Peak	360.00	300	Horizontal	Pass
5**	12059.713	43.09	0.94	54.0	10.91	AV	360.00	300	Horizontal	Pass
6	17414.625	55.62	3.62	74.0	18.38	Peak	137.00	200	Horizontal	Pass
6**	17414.625	47.01	3.62	54.0	6.99	AV	137.00	200	Horizontal	Pass

GFSK (BLE 1Mbps) LOW CHANNEL 1 GHz to 18 GHz, ANT V



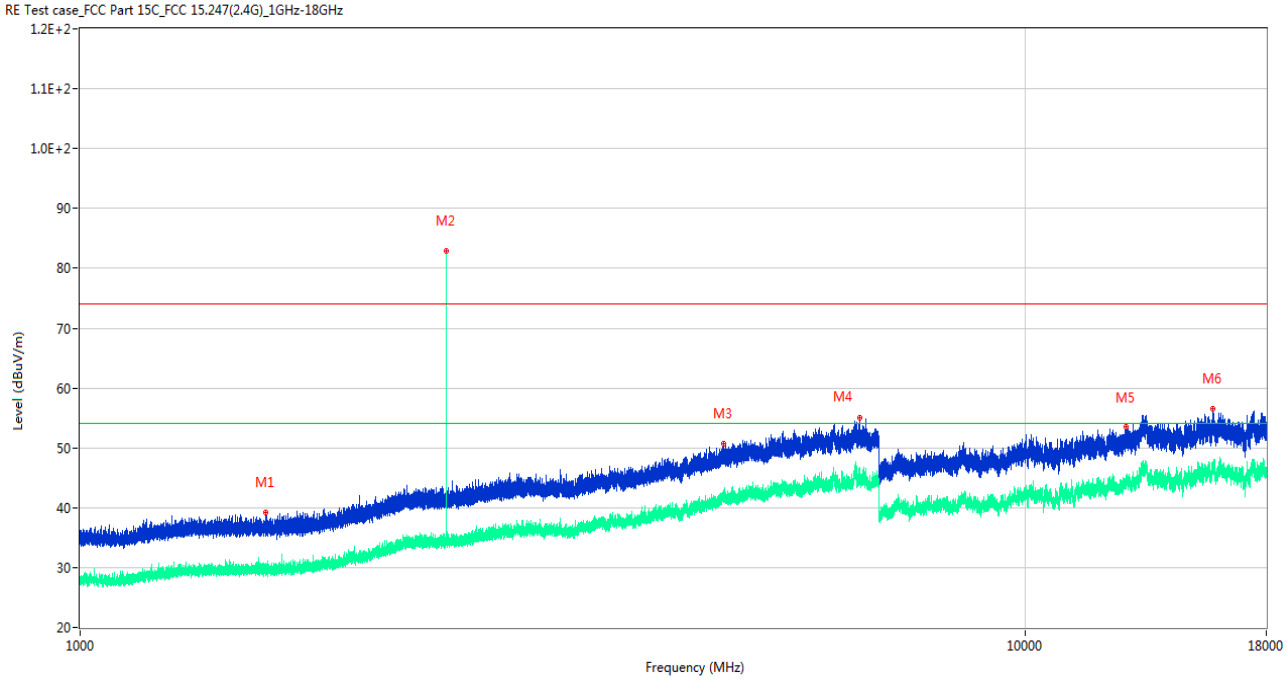
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1315.400	39.54	-17.39	74.0	34.46	Peak	289.00	100	Vertical	Pass
1**	1315.400	30.12	-17.39	54.0	23.88	AV	289.00	100	Vertical	Pass
2	2402.300	83.99	-12.41	74.0	-9.99	Peak	241.00	100	Vertical	N/A
2**	2402.300	83.15	-12.41	54.0	-29.15	AV	241.00	100	Vertical	N/A
3	4919.600	51.01	-2.49	74.0	22.99	Peak	232.00	150	Vertical	Pass
3**	4919.600	42.18	-2.49	54.0	11.82	AV	232.00	150	Vertical	Pass
4	6610.000	54.80	1.53	74.0	19.20	Peak	211.00	400	Vertical	Pass
4**	6610.000	45.95	1.53	54.0	8.05	AV	211.00	400	Vertical	Pass
5	12803.550	55.52	0.97	74.0	18.48	Peak	135.00	300	Vertical	Pass
5**	12803.550	44.39	0.97	54.0	9.61	AV	135.00	300	Vertical	Pass
6	16105.012	55.96	0.98	74.0	18.04	Peak	155.00	300	Vertical	Pass
6**	16105.012	46.68	0.98	54.0	7.32	AV	155.00	300	Vertical	Pass

GFSK (BLE 1Mbps) MIDDLE CHANNEL 1 GHz to 18 GHz, ANT H



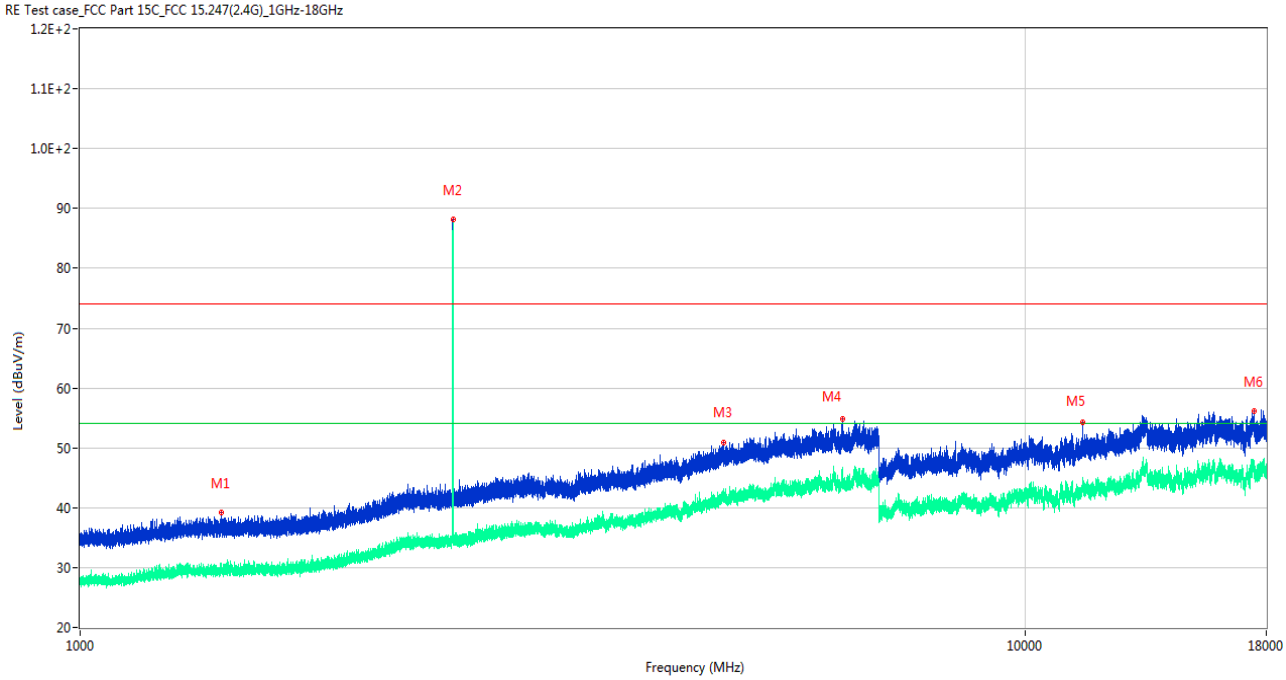
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1484.300	39.40	-17.64	74.0	34.60	Peak	222.00	100	Horizontal	Pass
1**	1484.300	29.47	-17.64	54.0	24.53	AV	222.00	100	Horizontal	Pass
2	2440.300	90.48	-12.42	74.0	-16.48	Peak	113.00	200	Horizontal	N/A
2**	2440.300	89.78	-12.42	54.0	-35.78	AV	113.00	200	Horizontal	N/A
3	4904.400	50.79	-2.33	74.0	23.21	Peak	35.00	150	Horizontal	Pass
3**	4904.400	42.06	-2.33	54.0	11.94	AV	35.00	150	Horizontal	Pass
4	6267.200	54.89	0.09	74.0	19.11	Peak	79.00	400	Horizontal	Pass
4**	6267.200	45.17	0.09	54.0	8.83	AV	79.00	400	Horizontal	Pass
5	12756.825	53.83	1.02	74.0	20.17	Peak	0.00	300	Horizontal	Pass
5**	12756.825	43.94	1.02	54.0	10.06	AV	0.00	300	Horizontal	Pass
6	17465.287	56.11	2.89	74.0	17.89	Peak	134.00	200	Horizontal	Pass
6**	17465.287	47.05	2.89	54.0	6.95	AV	134.00	200	Horizontal	Pass

GFSK (BLE 1Mbps) MIDDLE CHANNEL 1 GHz to 18 GHz, ANT V



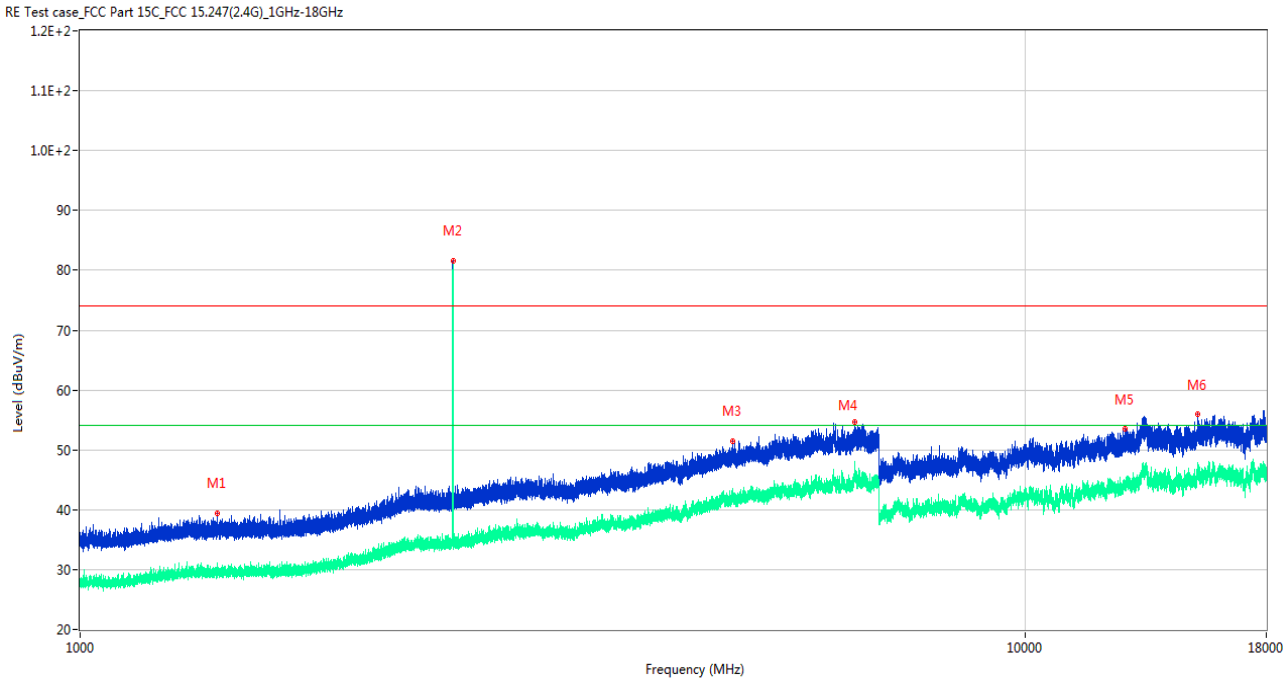
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1572.900	39.22	-17.59	74.0	34.78	Peak	255.00	400	Vertical	Pass
1**	1572.900	30.78	-17.59	54.0	23.22	AV	255.00	400	Vertical	Pass
2	2440.100	82.94	-12.41	74.0	-8.94	Peak	105.00	200	Vertical	N/A
2**	2440.100	82.26	-12.41	54.0	-28.26	AV	105.00	200	Vertical	N/A
3	4793.200	50.76	-2.38	74.0	23.24	Peak	316.00	150	Vertical	Pass
3**	4793.200	42.03	-2.38	54.0	11.97	AV	316.00	150	Vertical	Pass
4	6682.400	55.02	0.13	74.0	18.98	Peak	275.00	300	Vertical	Pass
4**	6682.400	45.95	0.13	54.0	8.05	AV	275.00	300	Vertical	Pass
5	12786.487	53.45	1.23	74.0	20.55	Peak	115.00	200	Vertical	Pass
5**	12786.487	44.17	1.23	54.0	9.83	AV	115.00	200	Vertical	Pass
6	15819.675	56.59	1.89	74.0	17.41	Peak	59.00	300	Vertical	Pass
6**	15819.675	46.29	1.89	54.0	7.71	AV	59.00	300	Vertical	Pass

GFSK (BLE 1Mbps) HIGH CHANNEL 1 GHz to 18 GHz, ANT H



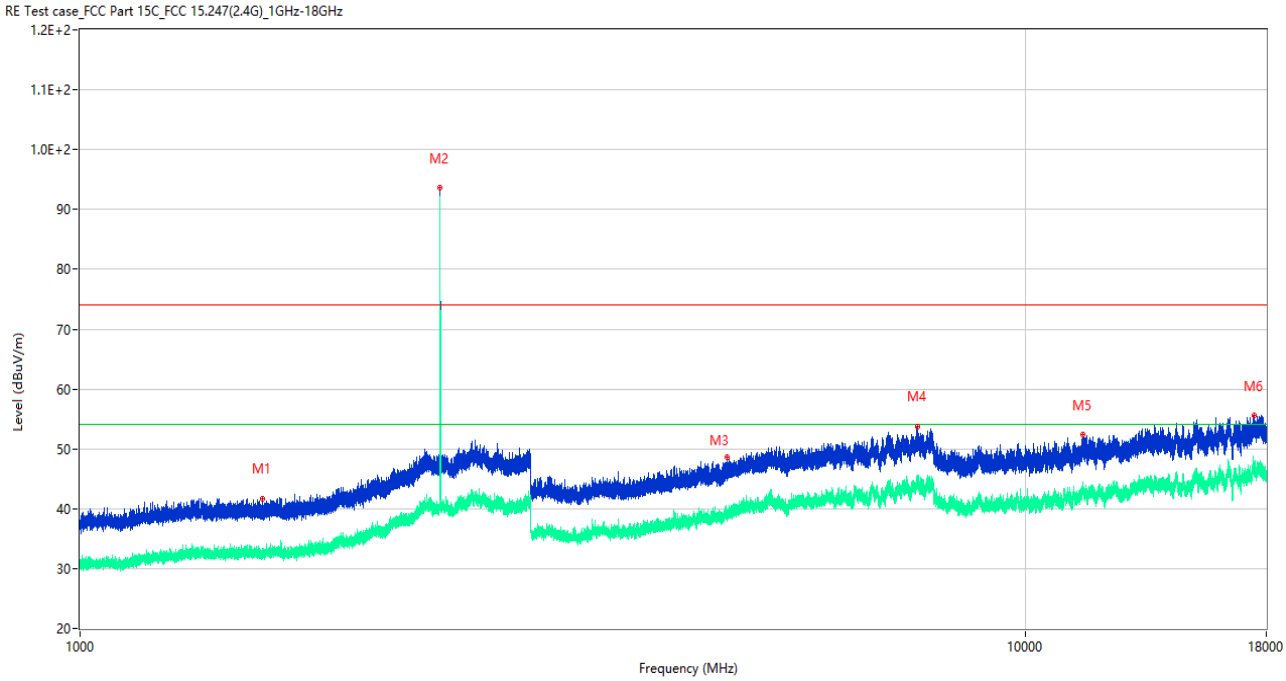
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1411.700	39.12	-17.42	74.0	34.88	Peak	70.00	300	Horizontal	Pass
1**	1411.700	29.74	-17.42	54.0	24.26	AV	70.00	300	Horizontal	Pass
2	2479.800	88.11	-12.03	74.0	-14.11	Peak	113.00	150	Horizontal	N/A
2**	2479.800	86.47	-12.03	54.0	-32.47	AV	113.00	150	Horizontal	N/A
3	4794.000	50.95	-2.30	74.0	23.05	Peak	299.00	150	Horizontal	Pass
3**	4794.000	41.63	-2.30	54.0	12.37	AV	299.00	150	Horizontal	Pass
4	6405.400	54.85	0.27	74.0	19.15	Peak	0.00	400	Horizontal	Pass
4**	6405.400	45.97	0.27	54.0	8.03	AV	0.00	400	Horizontal	Pass
5	11503.400	54.29	-0.04	74.0	19.71	Peak	0.00	200	Horizontal	Pass
5**	11503.400	43.54	-0.04	54.0	10.46	AV	0.00	200	Horizontal	Pass
6	17455.575	56.14	2.84	74.0	17.86	Peak	21.00	300	Horizontal	Pass
6**	17455.575	46.37	2.84	54.0	7.63	AV	21.00	300	Horizontal	Pass

GFSK (BLE 1Mbps) HIGH CHANNEL 1 GHz to 18 GHz, ANT V



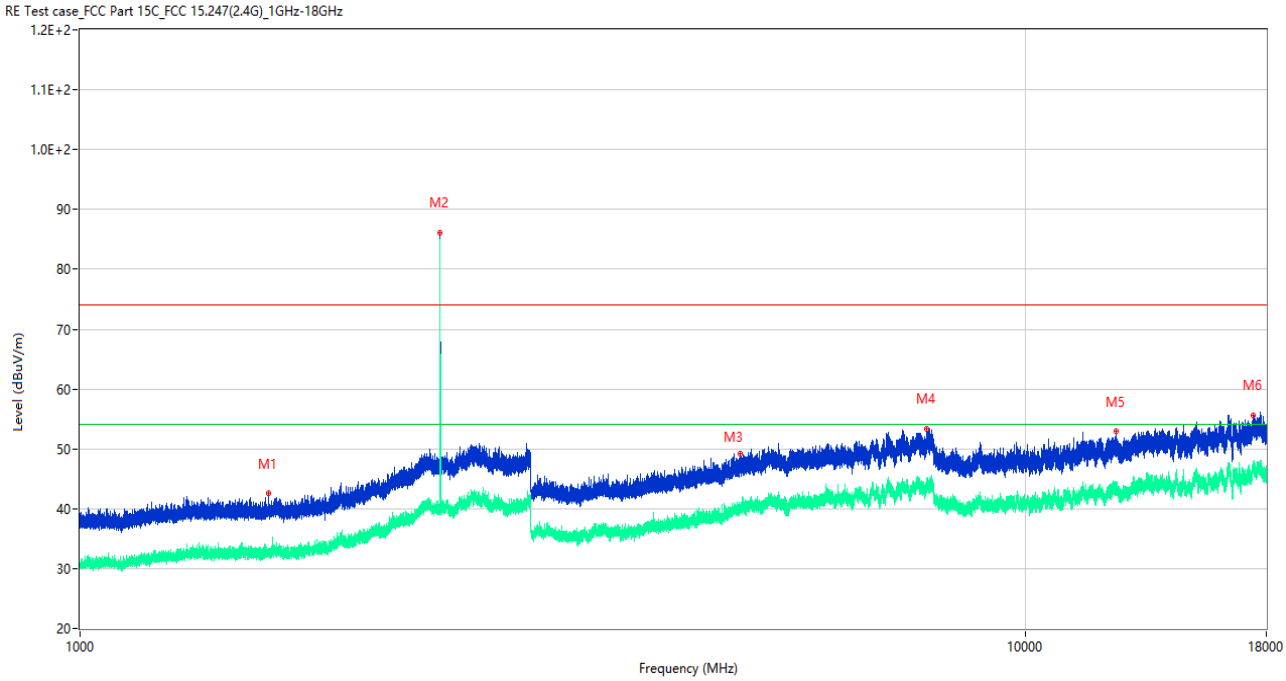
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1398.400	39.46	-17.47	74.0	34.54	Peak	143.00	400	Vertical	Pass
1**	1398.400	29.09	-17.47	54.0	24.91	AV	143.00	400	Vertical	Pass
2	2479.800	81.62	-12.03	74.0	-7.62	Peak	100.00	150	Vertical	N/A
2**	2479.800	80.55	-12.03	54.0	-26.55	AV	100.00	150	Vertical	N/A
3	4904.000	51.54	-2.36	74.0	22.46	Peak	79.00	200	Vertical	Pass
3**	4904.000	42.31	-2.36	54.0	11.69	AV	79.00	200	Vertical	Pass
4	6609.600	54.56	1.55	74.0	19.44	Peak	58.00	300	Vertical	Pass
4**	6609.600	46.12	1.55	54.0	7.88	AV	58.00	300	Vertical	Pass
5	12763.650	53.48	1.00	74.0	20.52	Peak	248.00	400	Vertical	Pass
5**	12763.650	44.53	1.00	54.0	9.47	AV	248.00	400	Vertical	Pass
6	15241.125	55.88	0.94	74.0	18.12	Peak	306.00	300	Vertical	Pass
6**	15241.125	46.61	0.94	54.0	7.39	AV	306.00	300	Vertical	Pass

GFSK (BLE 2Mbps) LOW CHANNEL 1 GHz to 18 GHz, ANT H



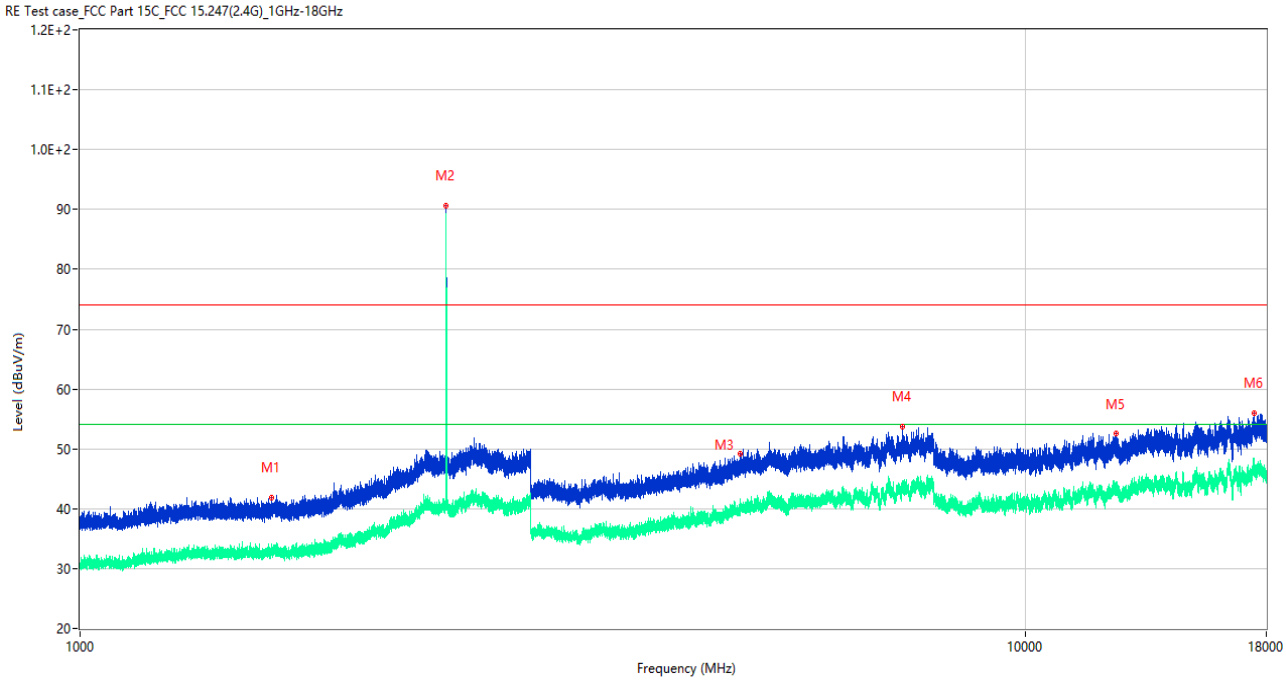
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1559.800	41.71	-17.12	74.0	32.29	Peak	157.00	300	Horizontal	Pass
1**	1559.800	32.81	-17.12	54.0	21.19	AV	157.00	300	Horizontal	Pass
2	2403.600	93.62	-10.35	74.0	-19.62	Peak	50.00	150	Horizontal	N/A
2**	2403.600	91.87	-10.35	54.0	-37.87	AV	50.00	150	Horizontal	N/A
3	4841.500	48.63	-3.84	74.0	25.37	Peak	4.00	150	Horizontal	Pass
3**	4841.500	38.44	-3.84	54.0	15.56	AV	4.00	150	Horizontal	Pass
4	7688.750	53.70	1.01	74.0	20.30	Peak	245.00	200	Horizontal	Pass
4**	7688.750	44.70	1.01	54.0	9.30	AV	245.00	200	Horizontal	Pass
5	11508.825	52.33	-0.71	74.0	21.67	Peak	120.00	200	Horizontal	Pass
5**	11508.825	43.51	-0.71	54.0	10.49	AV	120.00	200	Horizontal	Pass
6	17475.787	55.50	5.09	74.0	18.50	Peak	188.00	400	Horizontal	Pass
6**	17475.787	45.87	5.09	54.0	8.13	AV	188.00	400	Horizontal	Pass

GFSK (BLE 2Mbps) LOW CHANNEL 1 GHz to 18 GHz, ANT V



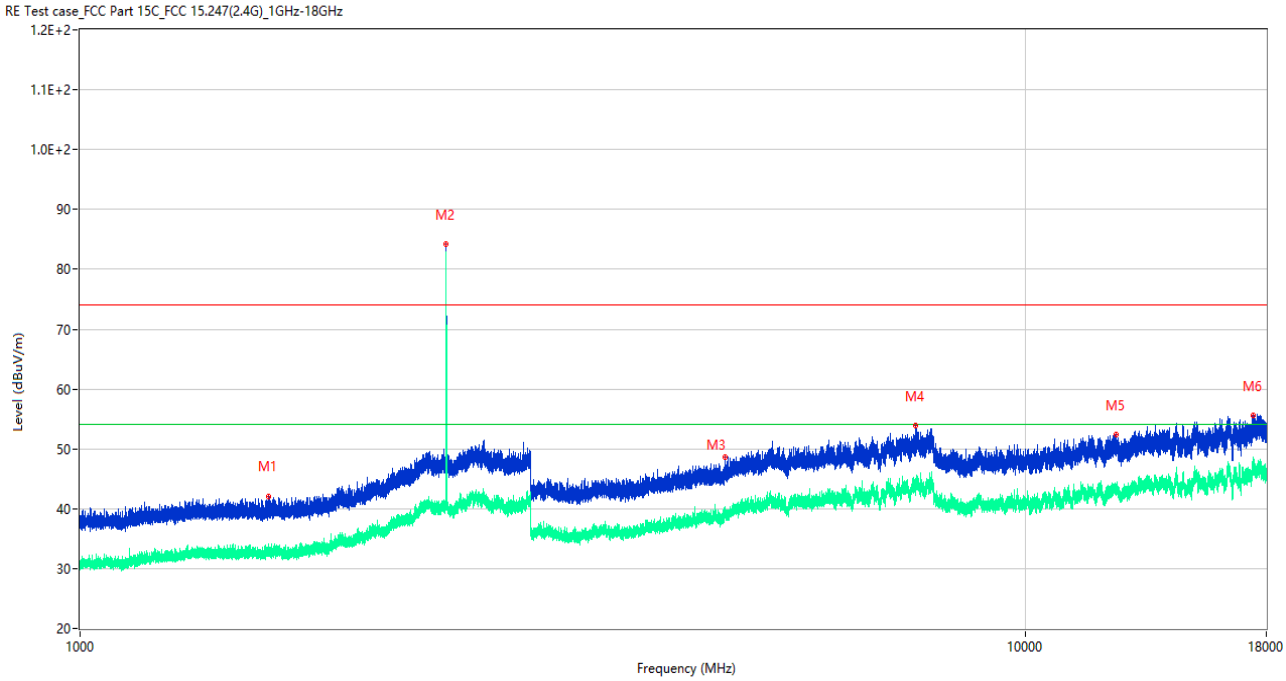
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1583.400	42.54	-16.85	74.0	31.46	Peak	0.00	100	Vertical	Pass
1**	1583.400	32.69	-16.85	54.0	21.31	AV	0.00	100	Vertical	Pass
2	2403.600	86.15	-10.35	74.0	-12.15	Peak	21.00	150	Vertical	N/A
2**	2403.600	83.94	-10.35	54.0	-29.94	AV	21.00	150	Vertical	N/A
3	4995.000	49.18	-3.29	74.0	24.82	Peak	360.00	100	Vertical	Pass
3**	4995.000	39.93	-3.29	54.0	14.07	AV	360.00	100	Vertical	Pass
4	7868.750	53.35	1.60	74.0	20.65	Peak	0.00	200	Vertical	Pass
4**	7868.750	43.69	1.60	54.0	10.31	AV	0.00	200	Vertical	Pass
5	12485.188	52.89	1.32	74.0	21.11	Peak	214.00	400	Vertical	Pass
5**	12485.188	42.82	1.32	54.0	11.18	AV	214.00	400	Vertical	Pass
6	17451.901	55.62	5.53	74.0	18.38	Peak	201.00	200	Vertical	Pass
6**	17451.901	46.75	5.53	54.0	7.25	AV	201.00	200	Vertical	Pass

GFSK (BLE 2Mbps) MIDDLE CHANNEL 1 GHz to 18 GHz, ANT H



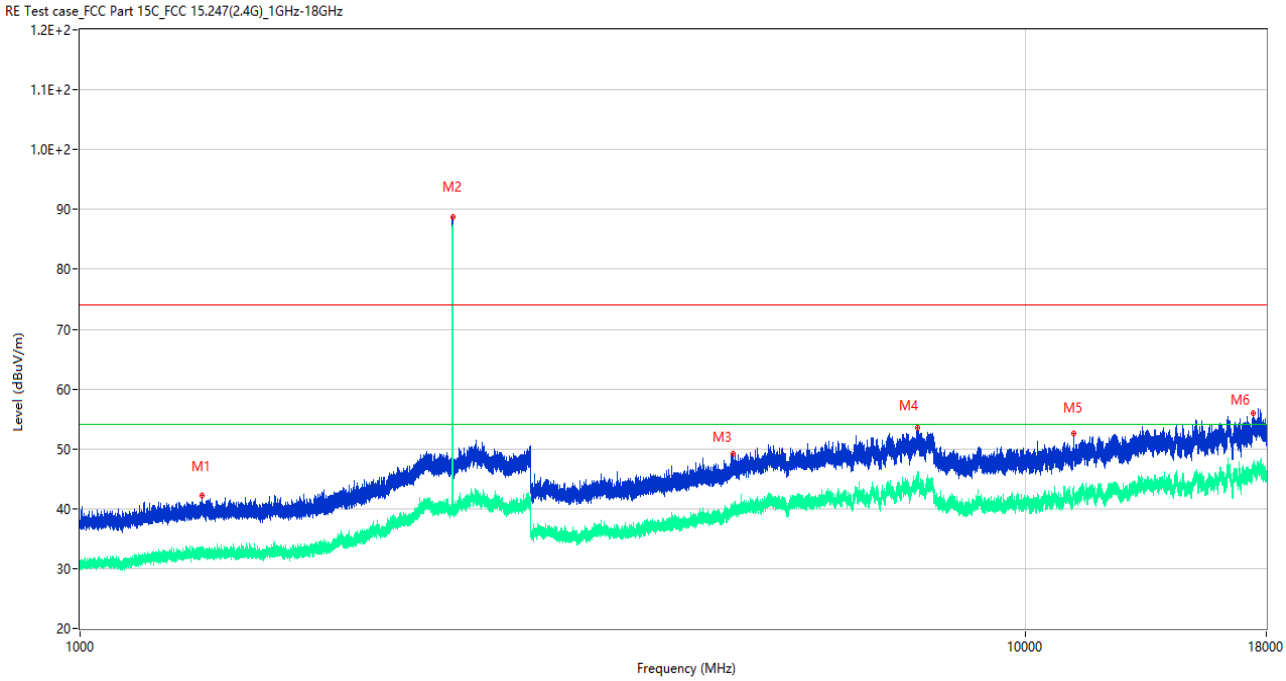
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1593.300	41.93	-17.01	74.0	32.07	Peak	152.00	100	Horizontal	Pass
1**	1593.300	32.88	-17.01	54.0	21.12	AV	152.00	100	Horizontal	Pass
2	2440.600	90.64	-9.80	74.0	-16.64	Peak	55.00	200	Horizontal	N/A
2**	2440.600	88.03	-9.80	54.0	-34.03	AV	55.00	200	Horizontal	N/A
3	4999.750	49.14	-3.13	74.0	24.86	Peak	96.00	200	Horizontal	Pass
3**	4999.750	39.79	-3.13	54.0	14.21	AV	96.00	200	Horizontal	Pass
4	7425.250	53.78	1.41	74.0	20.22	Peak	14.00	400	Horizontal	Pass
4**	7425.250	43.98	1.41	54.0	10.02	AV	14.00	400	Horizontal	Pass
5	12492.550	52.56	1.38	74.0	21.44	Peak	210.00	200	Horizontal	Pass
5**	12492.550	42.14	1.38	54.0	11.86	AV	210.00	200	Horizontal	Pass
6	17486.287	56.06	4.89	74.0	17.94	Peak	264.00	400	Horizontal	Pass
6**	17486.287	45.76	4.89	54.0	8.24	AV	264.00	400	Horizontal	Pass

GFSK (BLE 2Mbps) MIDDLE CHANNEL 1 GHz to 18 GHz, ANT V



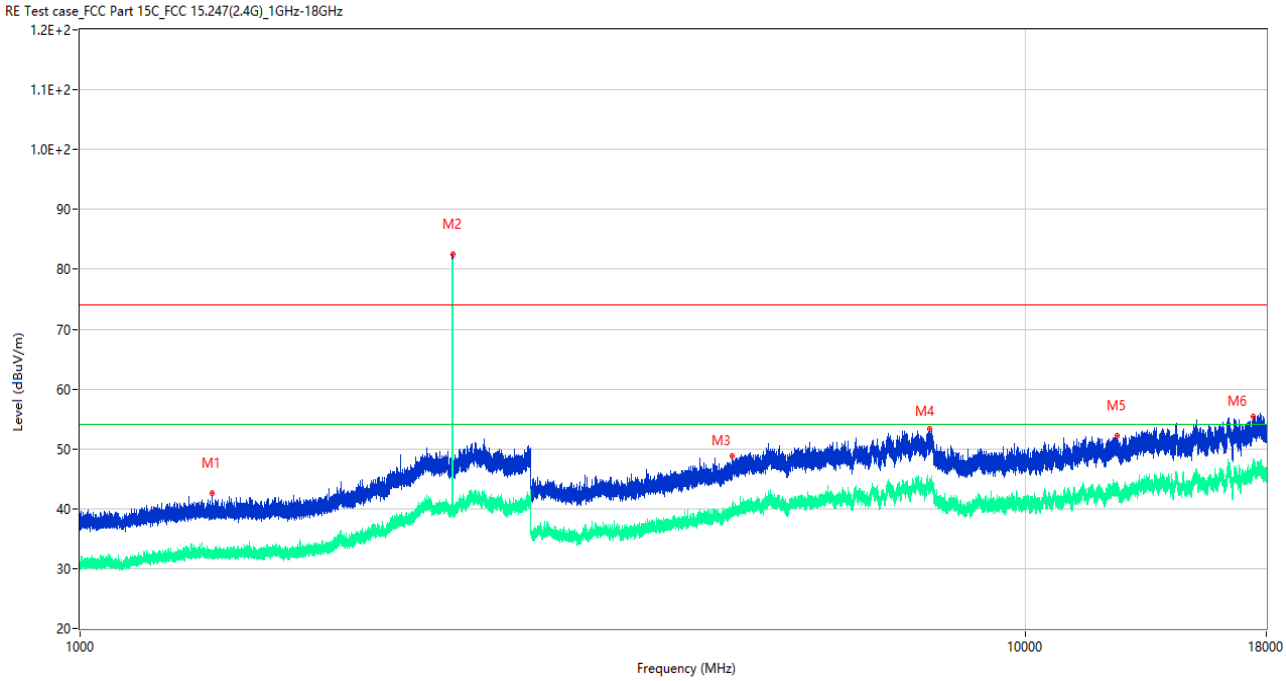
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1582.100	42.08	-16.74	74.0	31.92	Peak	172.00	100	Vertical	Pass
1**	1582.100	32.66	-16.74	54.0	21.34	AV	172.00	100	Vertical	Pass
2	2440.600	84.13	-9.80	74.0	-10.13	Peak	33.00	200	Vertical	N/A
2**	2440.600	82.29	-9.80	54.0	-28.29	AV	33.00	200	Vertical	N/A
3	4813.250	48.66	-3.03	74.0	25.34	Peak	360.00	150	Vertical	Pass
3**	4813.250	38.99	-3.03	54.0	15.01	AV	360.00	150	Vertical	Pass
4	7664.750	53.88	1.19	74.0	20.12	Peak	360.00	100	Vertical	Pass
4**	7664.750	44.07	1.19	54.0	9.93	AV	360.00	100	Vertical	Pass
5	12483.049	52.31	1.30	74.0	21.69	Peak	236.00	200	Vertical	Pass
5**	12483.049	43.55	1.30	54.0	10.45	AV	236.00	200	Vertical	Pass
6	17443.762	55.50	5.55	74.0	18.50	Peak	331.00	100	Vertical	Pass
6**	17443.762	48.00	5.55	54.0	6.00	AV	331.00	100	Vertical	Pass

GFSK (BLE 2Mbps) HIGH 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	1347.600	42.20	-16.75	74.0	31.80	Peak	0.00	300	Horizontal	Pass
1**	1347.600	32.40	-16.75	54.0	21.60	AV	0.00	300	Horizontal	Pass
2	2478.500	88.77	-11.03	74.0	-14.77	Peak	50.00	100	Horizontal	N/A
2**	2478.500	86.42	-11.03	54.0	-32.42	AV	50.00	100	Horizontal	N/A
3	4908.000	49.20	-3.45	74.0	24.80	Peak	149.00	150	Horizontal	Pass
3**	4908.000	39.36	-3.45	54.0	14.64	AV	149.00	150	Horizontal	Pass
4	7702.000	53.54	1.48	74.0	20.46	Peak	282.00	100	Horizontal	Pass
4**	7702.000	44.62	1.48	54.0	9.38	AV	282.00	100	Horizontal	Pass
5	11258.500	52.53	-0.91	74.0	21.47	Peak	262.00	300	Horizontal	Pass
5**	11258.500	42.83	-0.91	54.0	11.17	AV	262.00	300	Horizontal	Pass
6	17448.749	55.92	5.56	74.0	18.08	Peak	163.00	300	Horizontal	Pass
6**	17448.749	46.89	5.56	54.0	7.11	AV	163.00	300	Horizontal	Pass

GFSK (BLE 2Mbps) HIGH CHANNEL 1 GHz to 18 GHz, ANT V



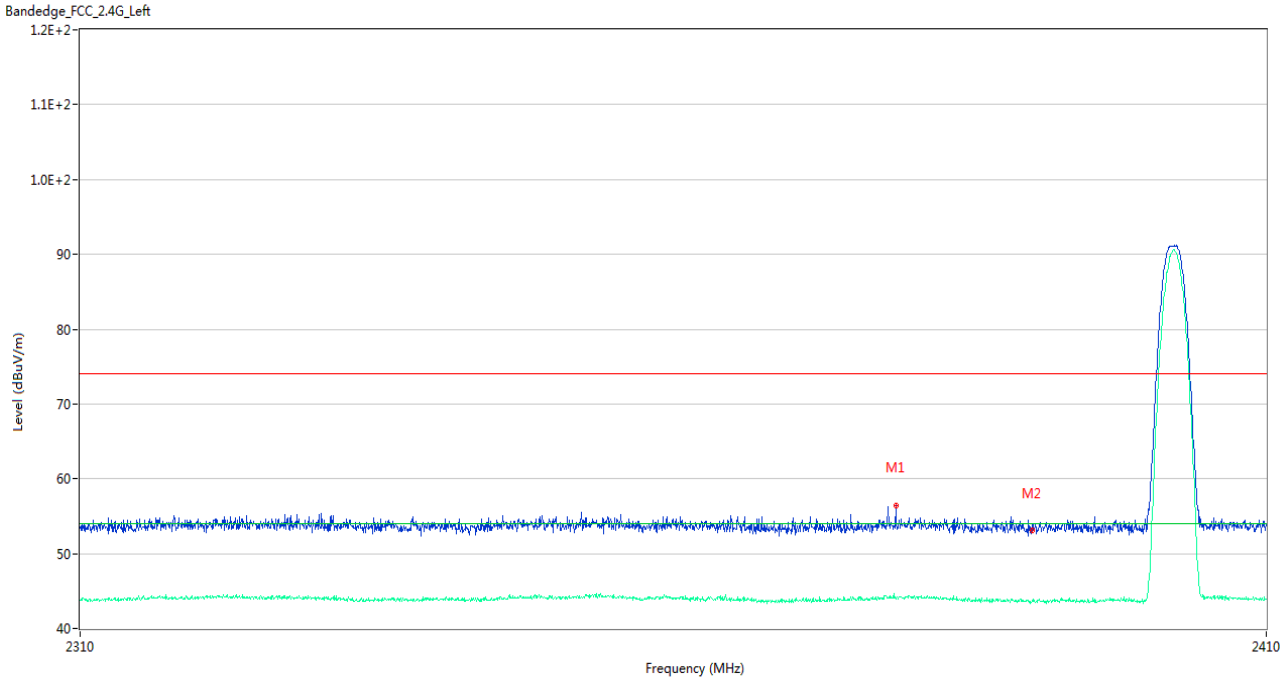
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1379.700	42.64	-17.13	74.0	31.36	Peak	302.00	400	Vertical	Pass
1**	1379.700	32.07	-17.13	54.0	21.93	AV	302.00	400	Vertical	Pass
2	2478.500	82.57	-11.03	74.0	-8.57	Peak	0.00	150	Vertical	N/A
2**	2478.500	81.00	-11.03	54.0	-27.00	AV	0.00	150	Vertical	N/A
3	4902.250	48.81	-3.28	74.0	25.19	Peak	212.00	100	Vertical	Pass
3**	4902.250	39.15	-3.28	54.0	14.85	AV	212.00	100	Vertical	Pass
4	7931.250	53.33	2.33	74.0	20.67	Peak	149.00	200	Vertical	Pass
4**	7931.250	44.04	2.33	54.0	9.96	AV	149.00	200	Vertical	Pass
5	12504.188	52.23	1.41	74.0	21.77	Peak	2.00	400	Vertical	Pass
5**	12504.188	43.05	1.41	54.0	10.95	AV	2.00	400	Vertical	Pass
6	17443.762	55.43	5.55	74.0	18.57	Peak	132.00	200	Vertical	Pass
6**	17443.762	46.84	5.55	54.0	7.16	AV	132.00	200	Vertical	Pass

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

Note [1]: The lowest and highest channels are tested to verify the band edge emissions. Please refer to the following the plots for emissions values.
Note [2]: The test data all are tested in the vertical and horizontal antenna which the trace is max hold. So these plots have shown the worst case.
Note [3]: According the ANSI C63.10-2013, 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.

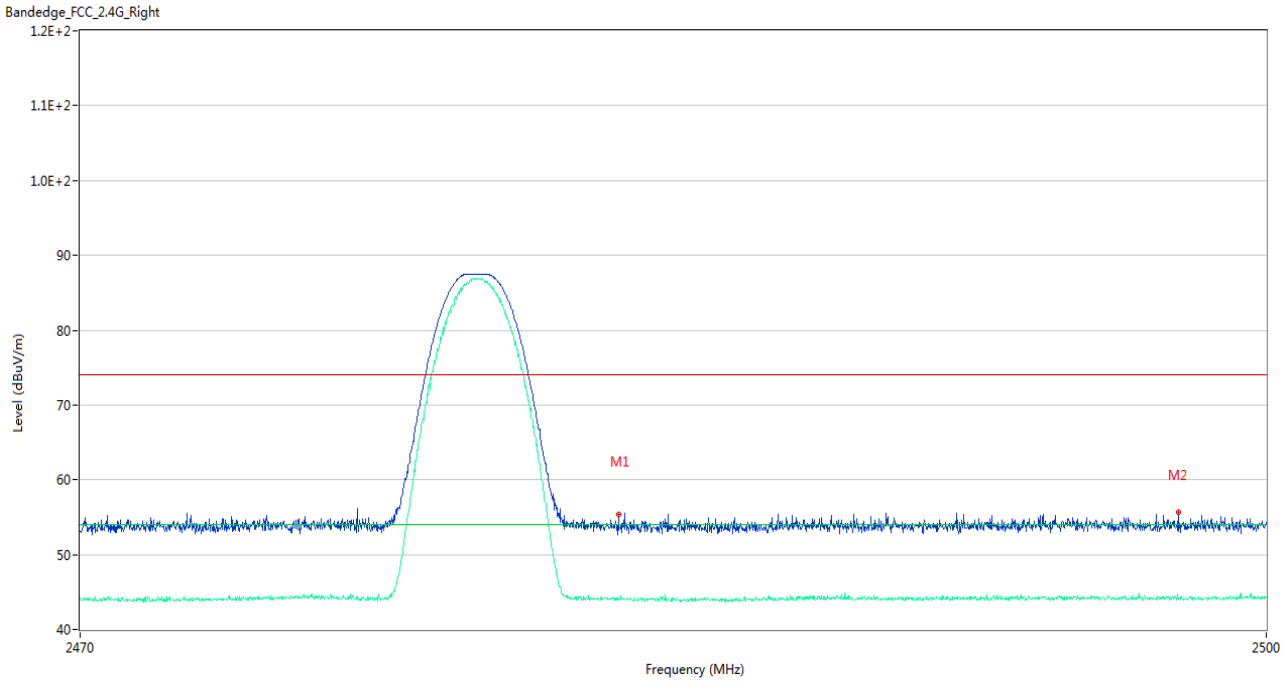
Test Data and Plots

GFSK (BLE 1Mbps) LOW CHANNEL



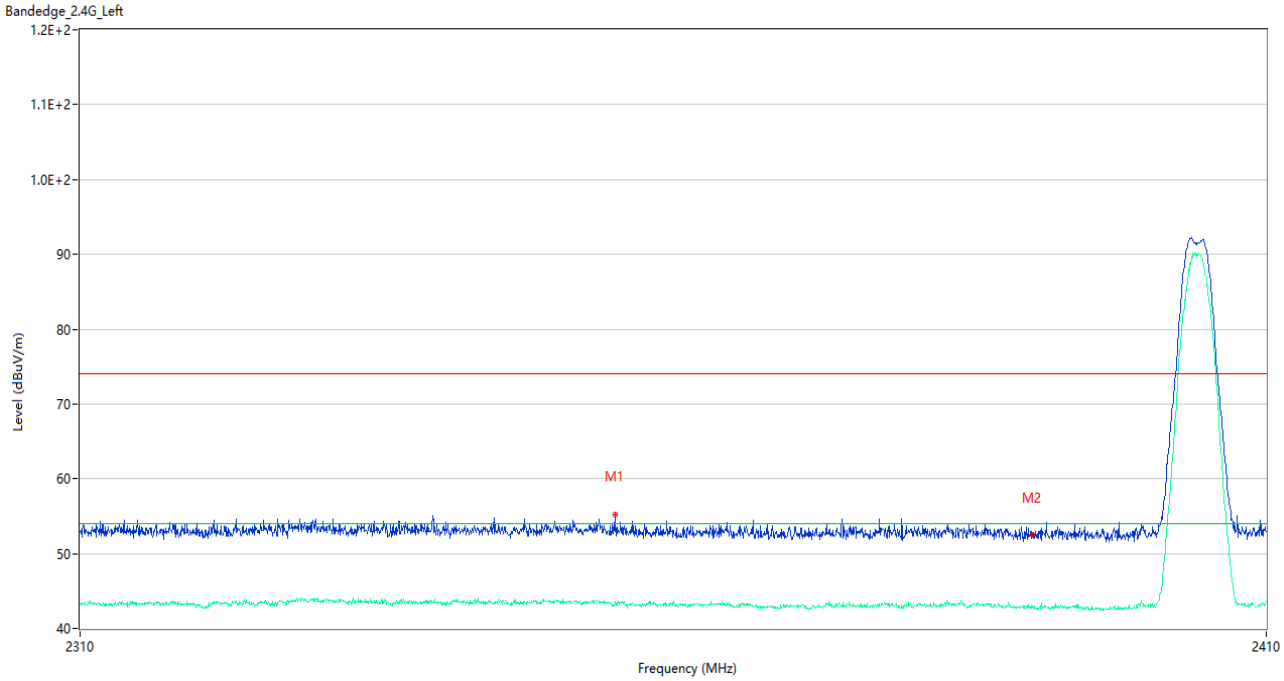
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2378.300	56.47	-0.50	74.0	17.53	Peak	257.00	100	Horizontal	Pass
1**	2378.300	43.97	-0.50	54.0	10.03	AV	257.00	100	Horizontal	Pass
2	2389.950	53.06	-0.59	74.0	20.94	Peak	77.00	150	Horizontal	Pass
2**	2389.950	43.70	-0.59	54.0	10.30	AV	77.00	150	Horizontal	Pass

GFSK (BLE 1Mbps) HIGH CHANNEL



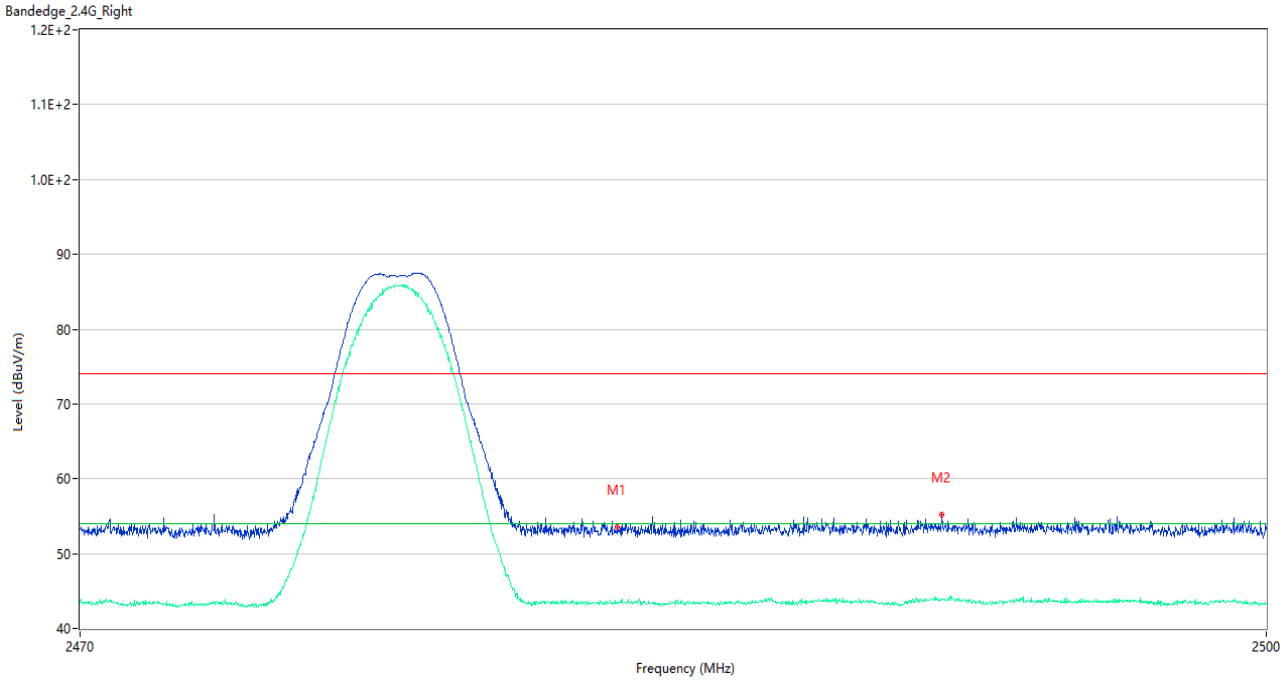
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2483.575	55.32	-0.06	74.0	18.68	Peak	240.00	200	Horizontal	Pass
1**	2483.575	44.01	-0.06	54.0	9.99	AV	240.00	200	Horizontal	Pass
2	2497.765	55.63	-0.24	74.0	18.37	Peak	264.00	200	Horizontal	Pass
2**	2497.765	44.22	-0.24	54.0	9.78	AV	264.00	200	Horizontal	Pass

GFSK (BLE 2Mbps) LOW CHANNEL



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2354.550	55.29	-1.22	74.0	18.71	Peak	354.00	200	Horizontal	Pass
1**	2354.550	43.24	-1.22	54.0	10.76	AV	354.00	200	Horizontal	Pass
2	2389.950	52.52	-1.82	74.0	21.48	Peak	11.00	200	Horizontal	Pass
2**	2389.950	43.03	-1.82	54.0	10.97	AV	11.00	200	Horizontal	Pass

GFSK (BLE 2Mbps) HIGH CHANNEL



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2483.545	53.49	-1.09	74.0	20.51	Peak	11.00	150	Horizontal	Pass
1**	2483.545	43.50	-1.09	54.0	10.50	AV	11.00	150	Horizontal	Pass
2	2491.765	55.16	-0.67	74.0	18.84	Peak	0.00	200	Horizontal	Pass
2**	2491.765	43.99	-0.67	54.0	10.01	AV	0.00	200	Horizontal	Pass

A.8 Power Spectral Density (PSD)

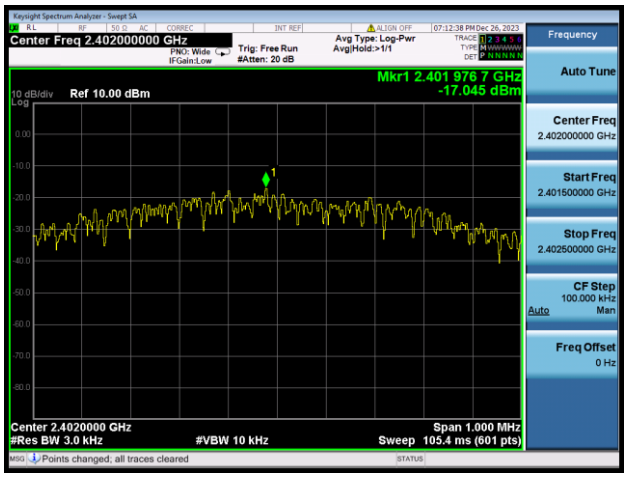
Test Data

GFSK (BLE 1Mbps)			
Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
Low Channel	-17.05	8	Pass
Middle Channel	-15.92	8	Pass
High Channel	-16.65	8	Pass

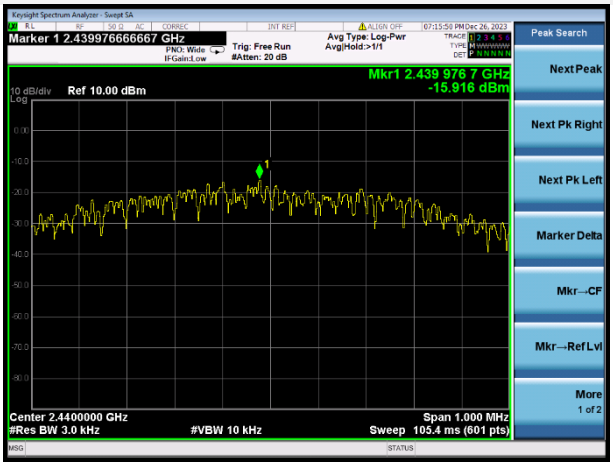
GFSK (BLE 2Mbps)			
Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
Low Channel	-19.32	8	Pass
Middle Channel	-18.61	8	Pass
High Channel	-19.15	8	Pass

Test Plots

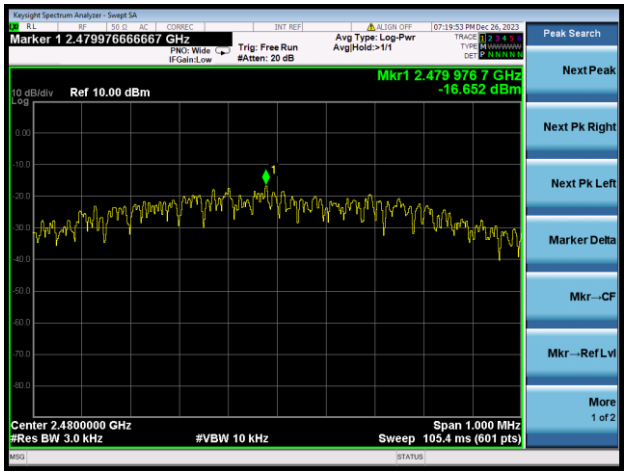
GFSK (BLE 1Mbps) LOW CHANNEL



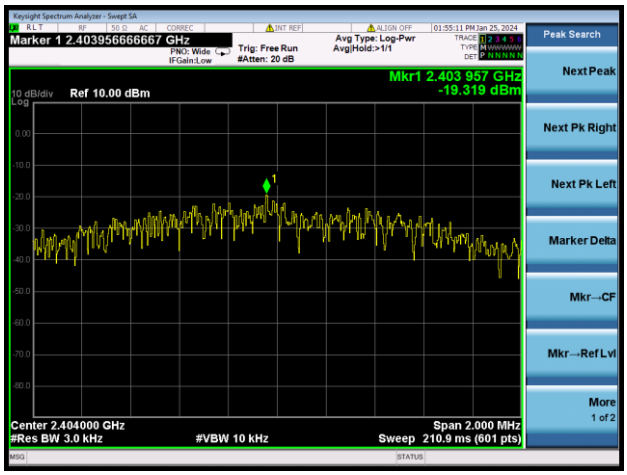
GFSK (BLE 1Mbps) MIDDLE CHANNEL



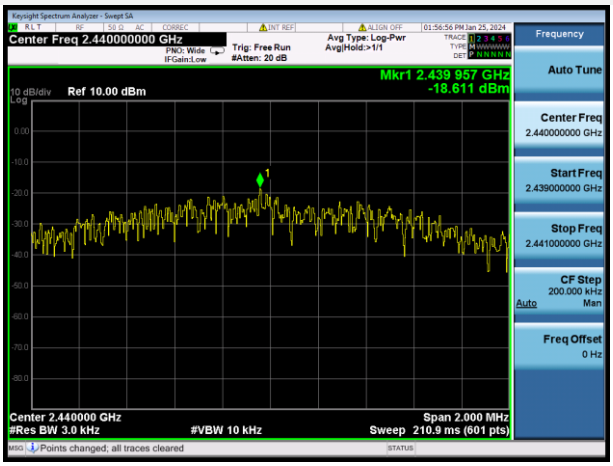
GFSK (BLE 1Mbps) HIGH CHANNEL



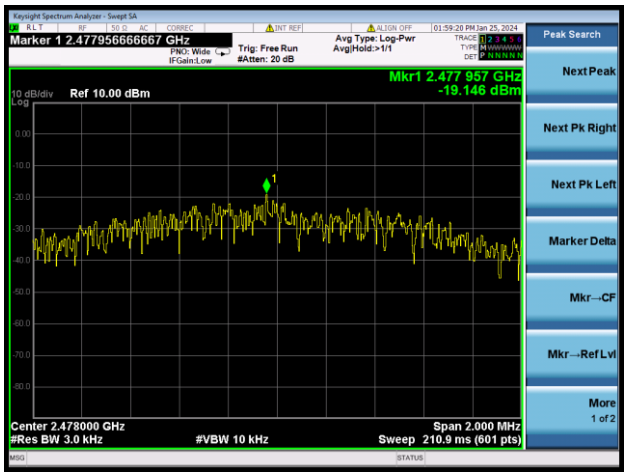
GFSK (BLE 2Mbps) LOW CHANNEL



GFSK (BLE 2Mbps) MIDDLE CHANNEL



GFSK (BLE 2Mbps) HIGH CHANNEL



ANNEX B TEST SETUP PHOTOS

Please refer the document “BL-SZ23C0537-AR.PDF”.

ANNEX C EUT EXTERNAL PHOTOS

Please refer the document “BL-SZ23C0537-AW.PDF”.

ANNEX D EUT INTERNAL PHOTOS

Please refer the document “BL-SZ23C0537-AI.PDF”.

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