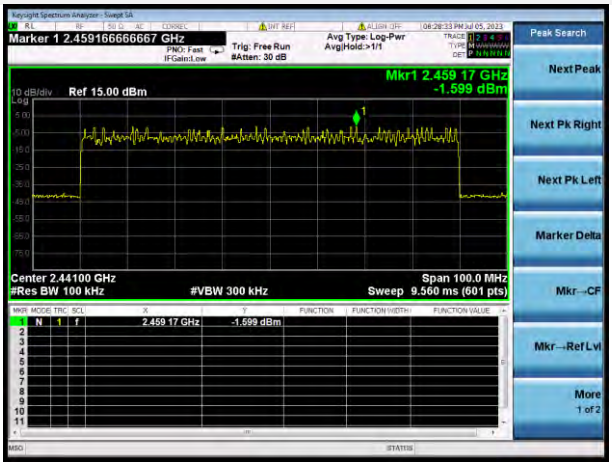
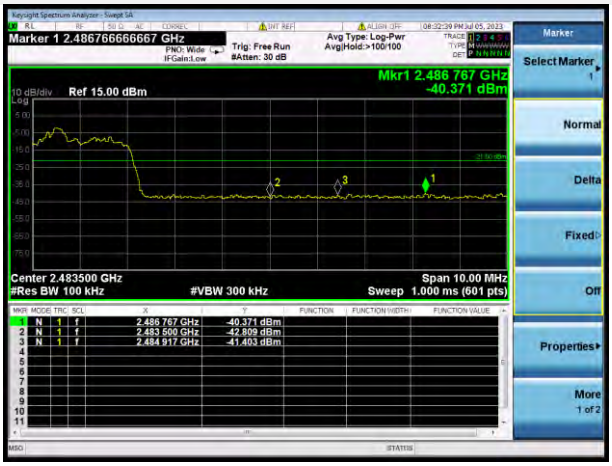
8-DPSK HOPPING, CARRIER LEVEL

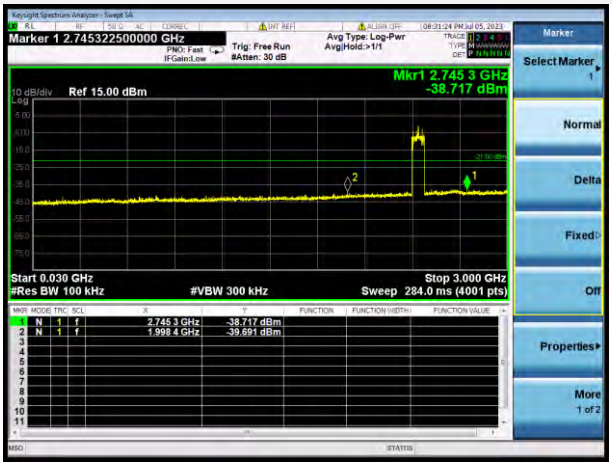


8-DPSK Hopping BAND EDGE (LOW)

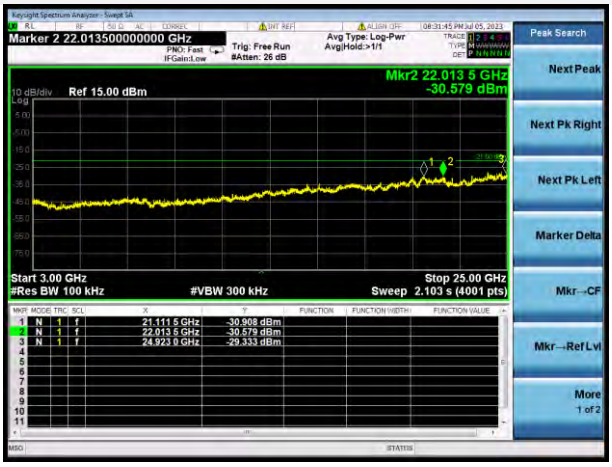
8-DPSK Hopping BAND EDGE (HIGH)



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



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



5.9 Conducted Emission

5.9.1 Limit

FCC §15.207

For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50μH/50Ω line impedance stabilization network (LISN).

Frequency range (MHz)	Conducted Limit (dBμV)	
	Quai-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
0.50 - 30	60	50

5.9.2 Test Setup

See section 4.5.2 for test setup description for the AC power supply port. The photo of test setup please refer to ANNEX A.

5.9.3 Test Procedure

The maximum conducted interference is searched using Peak (PK), if the emission levels more than the AV and QP limits, and that have narrow margins from the AV and QP limits will be re-measured with AV and QP detectors. Tests for both L phase and N phase lines of the power mains connected to the EUT are performed. Refer to recorded points and plots below.
Devices subject to Part 15 must be tested for all available U.S. voltages and frequencies (such as a nominal 120 VAC, 50/60 Hz and 240 VAC, 50/60 Hz) for which the device is capable of operation. A device rated for 50/60 Hz operation need not be tested at both frequencies provided the radiated and line conducted emissions are the same at both frequencies.

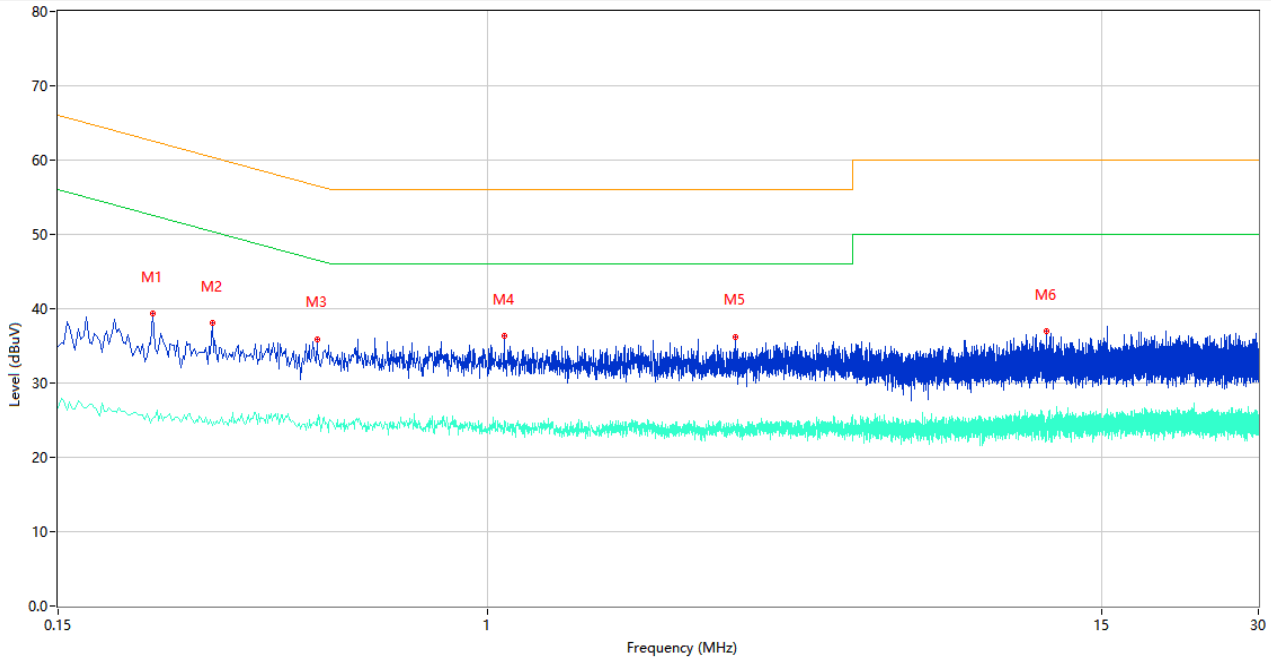
5.9.4 Test Result

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

Note [2]: Results (dBuV) = Original reading level of Spectrum Analyzer (dBuV) + Factor (dB)

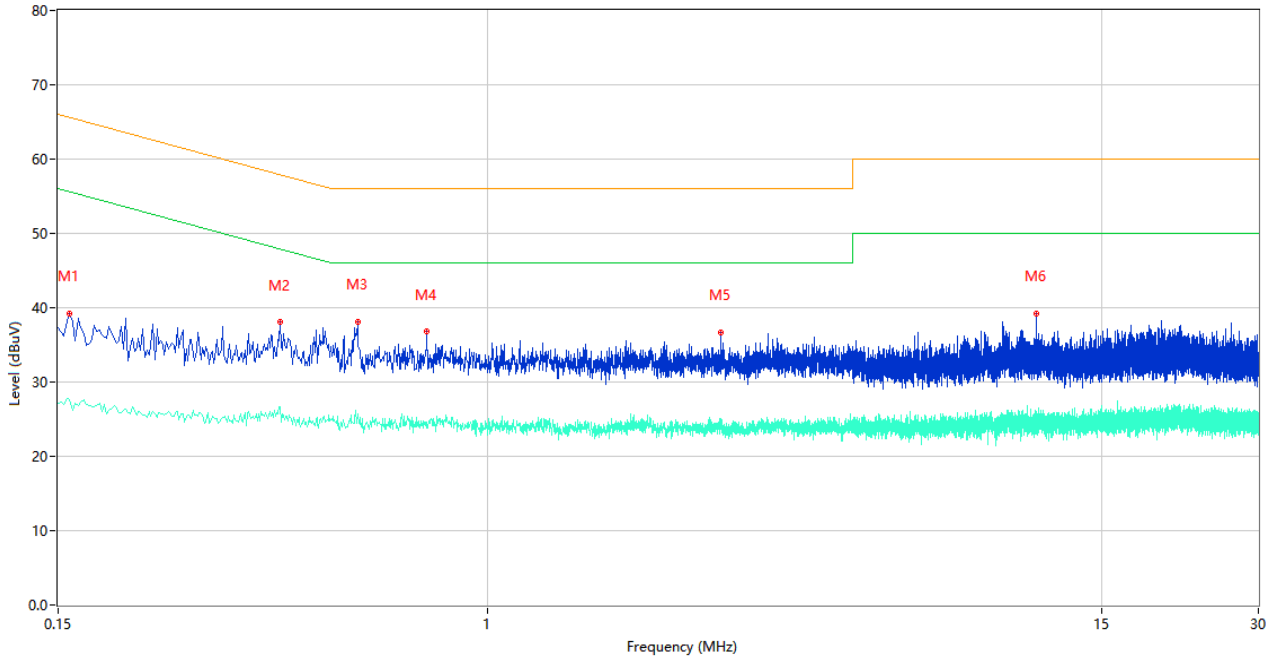
Test Data and Plots

PHASE L



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.228	39.34	9.77	62.52	23.18	Peak	L	Pass
1**	0.228	25.21	9.77	52.52	27.31	AV	L	Pass
2	0.296	38.05	9.76	60.35	22.30	Peak	L	Pass
2**	0.296	24.31	9.76	50.35	26.04	AV	L	Pass
3	0.470	35.91	10.01	56.51	20.60	Peak	L	Pass
3**	0.470	25.28	10.01	46.51	21.23	AV	L	Pass
4	1.074	36.34	10.08	56.00	19.66	Peak	L	Pass
4**	1.074	24.97	10.08	46.00	21.03	AV	L	Pass
5	2.978	36.24	10.25	56.00	19.76	Peak	L	Pass
5**	2.978	23.97	10.25	46.00	22.03	AV	L	Pass
6	11.778	36.97	10.42	60.00	23.03	Peak	L	Pass
6**	11.778	24.10	10.42	50.00	25.90	AV	L	Pass

PHASE N



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.158	39.25	9.78	65.57	26.32	Peak	N	Pass
1**	0.158	27.54	9.78	55.57	28.03	AV	N	Pass
2	0.400	38.08	10.55	57.85	19.77	Peak	N	Pass
2**	0.400	26.73	10.55	47.85	21.12	AV	N	Pass
3	0.562	38.06	10.06	56.00	17.94	Peak	N	Pass
3**	0.562	25.64	10.06	46.00	20.36	AV	N	Pass
4	0.764	36.75	10.28	56.00	19.25	Peak	N	Pass
4**	0.764	24.64	10.28	46.00	21.36	AV	N	Pass
5	2.800	36.71	10.34	56.00	19.29	Peak	N	Pass
5**	2.800	25.12	10.34	46.00	20.88	AV	N	Pass
6	11.240	39.21	10.69	60.00	20.79	Peak	N	Pass
6**	11.240	24.31	10.69	50.00	25.69	AV	N	Pass

5.10 Radiated Spurious Emission

5.10.1 Limit

FCC §15.209&15.247(d)

Radiated emission outside the frequency band attenuation below the general limits specified in FCC section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in FCC section 15.205(a), must also comply with the radiated emission limits specified in FCC section 15.209(a).

According to FCC section 15.209 (a), except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (μV/m)	Measurement Distance (m)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 - 30.0	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

Note:

1. Field Strength (dBμV/m) = 20*log[Field Strength (μV/m)].
2. In the emission tables above, the tighter limit applies at the band edges.
3. For Above 1000 MHz, the emission limit in this paragraph is based on measurement instrumentation employing an average detector, measurement using instrumentation with a peak detector function, corresponding to 20dB above the maximum permitted average limit.
4. For above 1000 MHz, limit field strength of harmonics: 54dBuV/m@3m (AV) and 74dBuV/m@3m (PK).

5.10.2 Test Setup

See section 4.5.3 to 4.5.5 for test setup description for the antenna port. The photo of test setup please refer to ANNEX A.

5.10.3 Test Procedure

The measurement frequency range is from 9 kHz to the 10th harmonic of the fundamental frequency. The Turn Table is actuated to turn from 0° to 360°, and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. Mid channels on all channel bandwidth verified. Only the worst RB size/offset presented.

The power of the EUT transmitting frequency should be ignored.

All Spurious Emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

Use the following spectrum analyzer settings:

Span = wide enough to fully capture the emission being measured
RBW = 1 MHz for f ≥ 1 GHz, 100 kHz for f < 1 GHz
VBW ≥ RBW
Sweep = auto
Detector function = peak
Trace = max hold
For measurement below 1GHz, If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported, Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

5.10.4 Test Result

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.

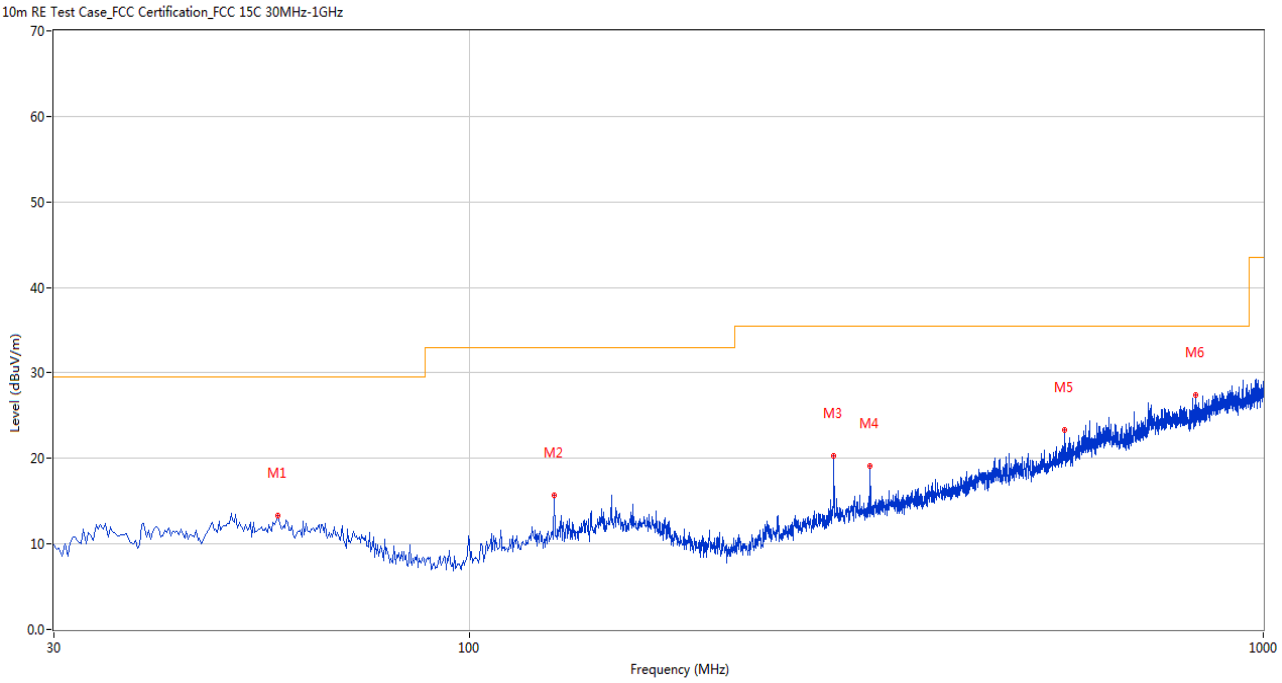
Note [3]: The EUT is working in the Normal link mode below 1 GHz. All modes have been tested and DH5-Hopping mode is the worst.

Note [4]: 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.

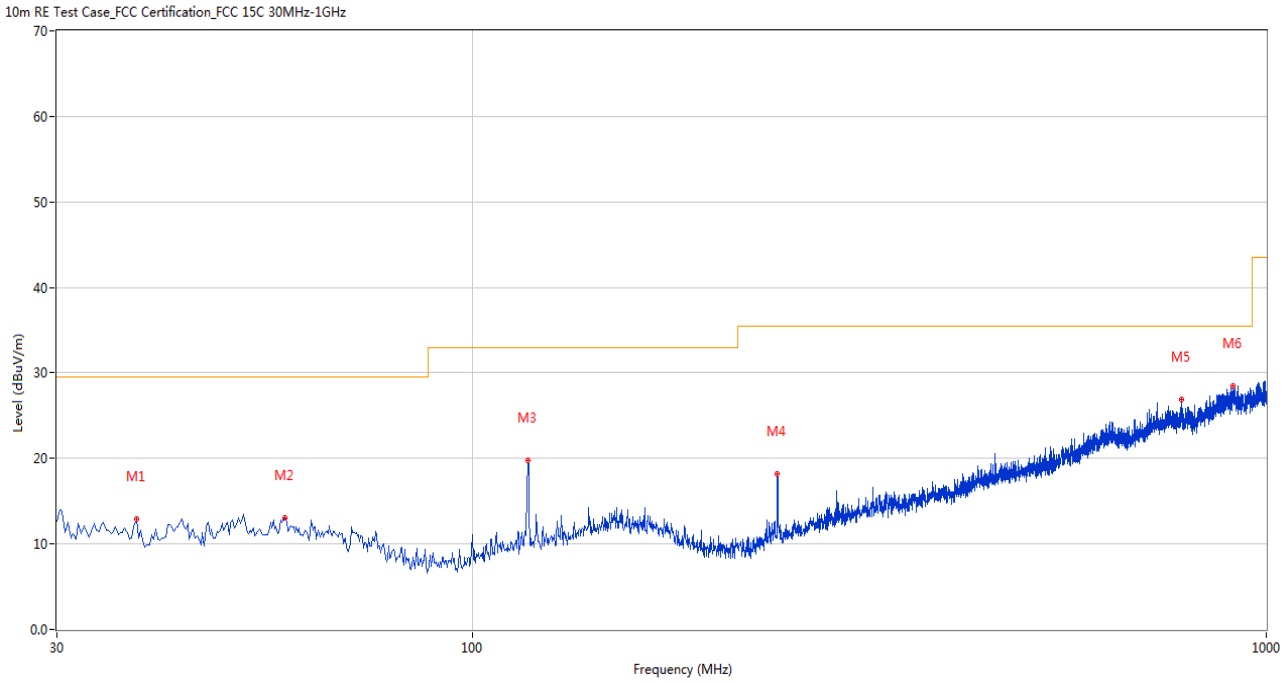
Test Data and Plots

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	57.396	13.30	-26.27	29.5	16.20	Peak	7.00	100	Horizontal	Pass
2	127.946	15.66	-27.49	33.0	17.34	Peak	31.00	100	Horizontal	Pass
3	287.956	20.32	-25.01	35.5	15.18	Peak	0.00	200	Horizontal	Pass
4	319.958	19.17	-24.11	35.5	16.33	Peak	349.00	100	Horizontal	Pass
5	562.397	23.37	-18.17	35.5	12.13	Peak	134.00	100	Horizontal	Pass
6	821.807	27.45	-12.60	35.5	8.05	Peak	0.00	200	Horizontal	Pass

30 MHz to 1 GHz, ANT V

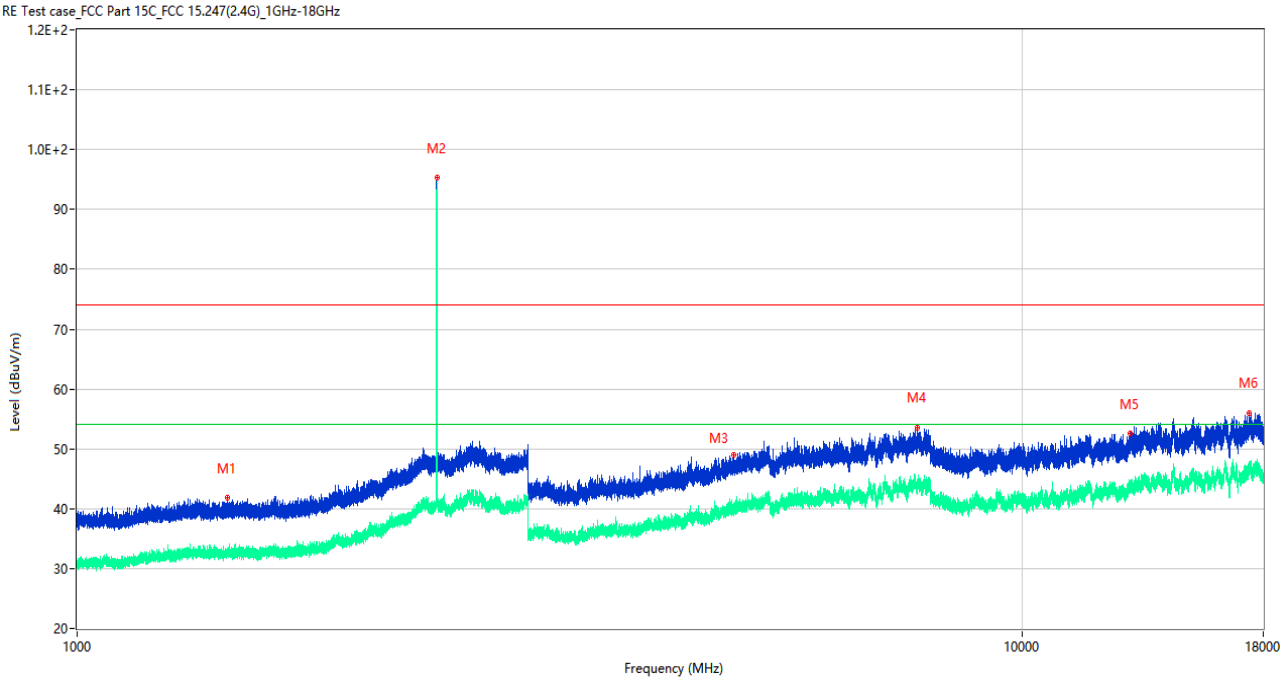


No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	37.758	12.98	-26.92	29.5	16.52	Peak	48.00	100	Vertical	Pass
2	58.123	13.03	-26.34	29.5	16.47	Peak	172.00	200	Vertical	Pass
3	117.521	19.81	-28.53	33.0	13.19	Peak	237.00	200	Vertical	Pass
4	242.377	18.16	-27.15	35.5	17.34	Peak	237.00	200	Vertical	Pass
5	782.047	26.84	-13.03	35.5	8.66	Peak	287.00	100	Vertical	Pass
6	908.600	28.41	-10.60	35.5	7.09	Peak	183.00	200	Vertical	Pass

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

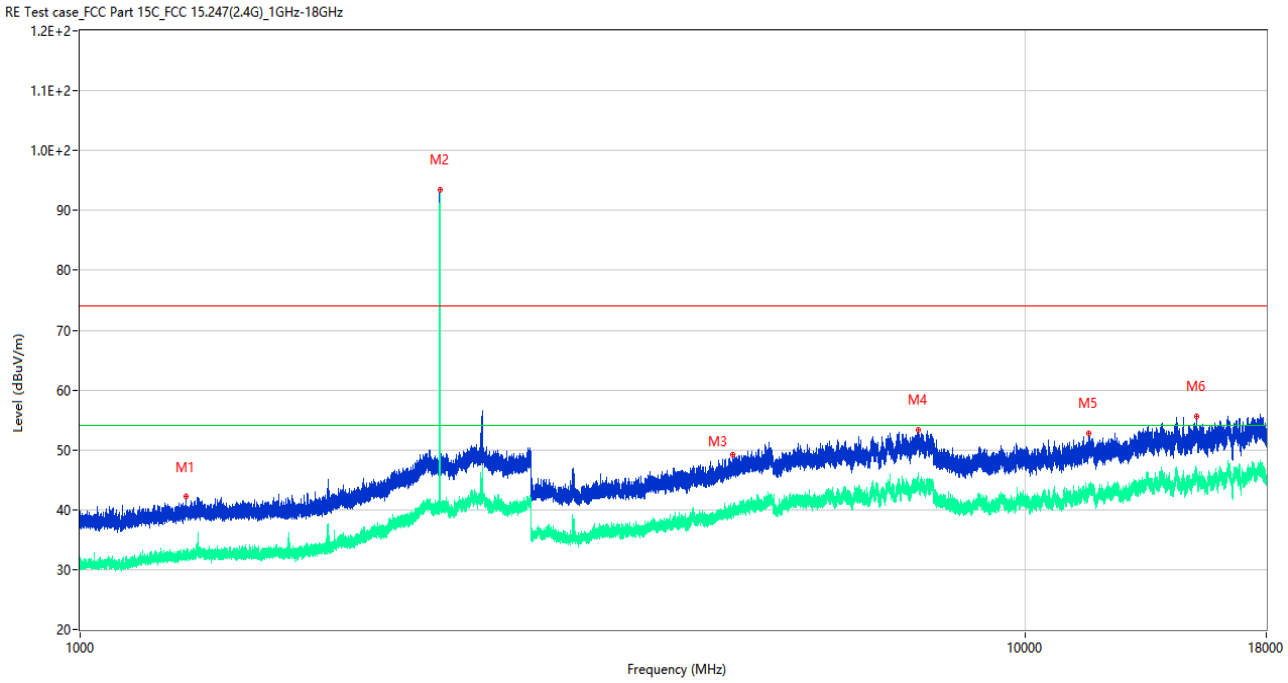
Note 2: The spurious from 18GHz-25GHz is noise only, do not show on the report.

GFSK LOW CHANNEL 1 GHz to 18 GHz, ANT H



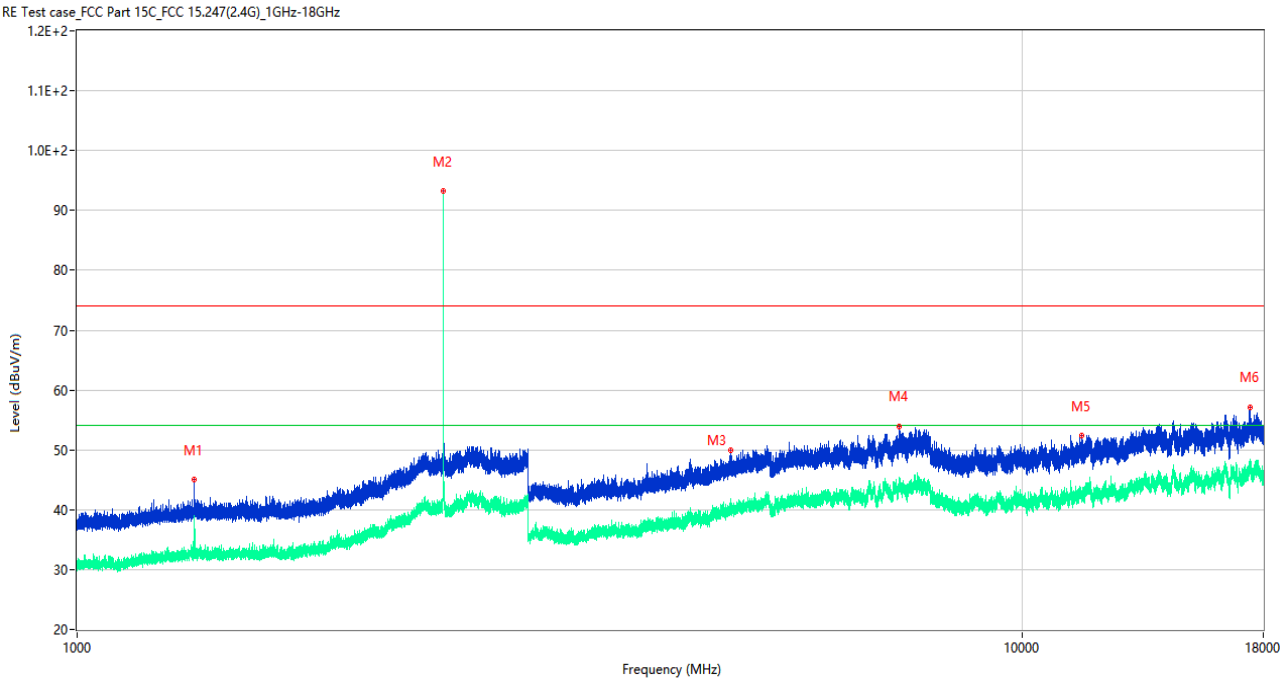
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1440.500	41.77	-16.99	74.0	32.23	Peak	74.00	200	Horizontal	Pass
1**	1440.500	32.83	-16.99	54.0	21.17	AV	74.00	200	Horizontal	Pass
2	2402.000	95.26	-10.61	74.0	-21.26	Peak	232.00	200	Horizontal	N/A
2**	2402.000	94.68	-10.61	54.0	-40.68	AV	232.00	200	Horizontal	N/A
3	4953.500	48.96	-3.43	74.0	25.04	Peak	285.00	100	Horizontal	Pass
3**	4953.500	39.89	-3.43	54.0	14.11	AV	285.00	100	Horizontal	Pass
4	7752.750	53.56	0.77	74.0	20.44	Peak	46.00	200	Horizontal	Pass
4**	7752.750	44.50	0.77	54.0	9.50	AV	46.00	200	Horizontal	Pass
5	12999.375	52.57	2.04	74.0	21.43	Peak	219.00	300	Horizontal	Pass
5**	12999.375	43.05	2.04	54.0	10.95	AV	219.00	300	Horizontal	Pass
6	17403.075	55.99	5.44	74.0	18.01	Peak	122.00	300	Horizontal	Pass
6**	17403.075	47.02	5.44	54.0	6.98	AV	122.00	300	Horizontal	Pass

GFSK LOW CHANNEL 1 GHz to 18 GHz, ANT V



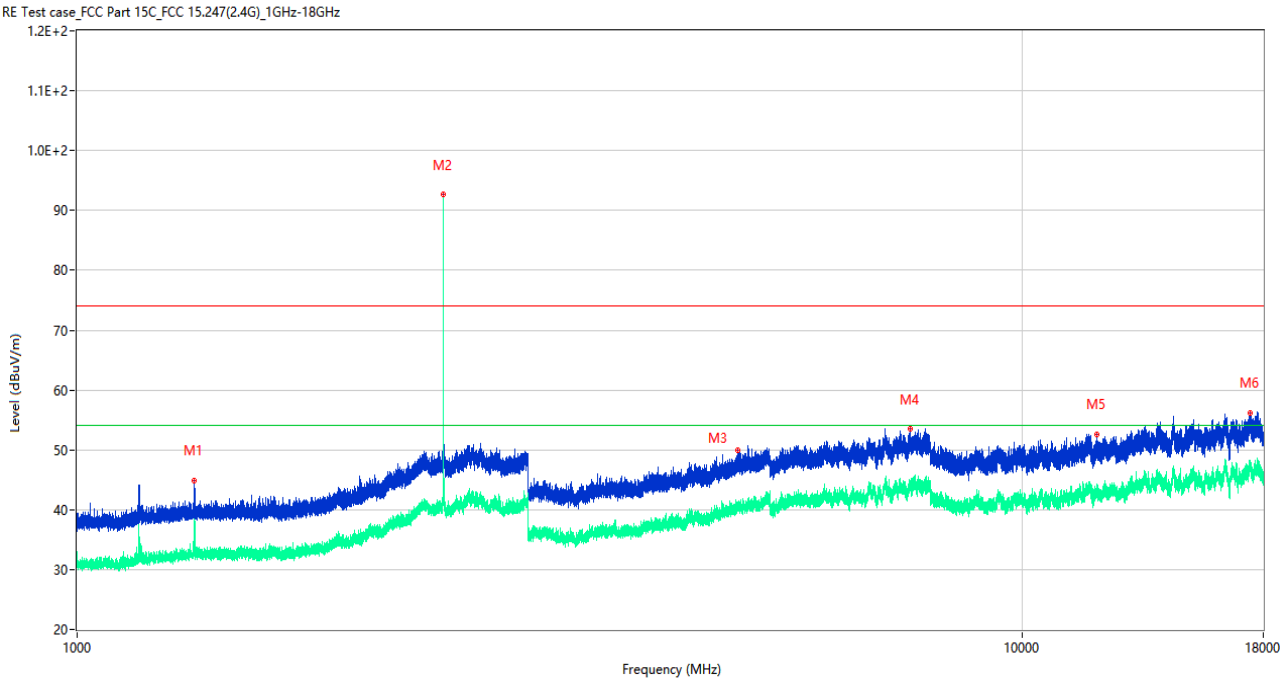
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1294.500	42.15	-16.88	74.0	31.85	Peak	171.00	200	Vertical	Pass
1**	1294.500	32.81	-16.88	54.0	21.19	AV	171.00	200	Vertical	Pass
2	2402.000	93.46	-10.61	74.0	-19.46	Peak	108.00	100	Vertical	N/A
2**	2402.000	92.54	-10.61	54.0	-38.54	AV	108.00	100	Vertical	N/A
3	4907.750	49.17	-3.47	74.0	24.83	Peak	202.00	150	Vertical	Pass
3**	4907.750	39.35	-3.47	54.0	14.65	AV	202.00	150	Vertical	Pass
4	7703.500	53.39	1.35	74.0	20.61	Peak	302.00	400	Vertical	Pass
4**	7703.500	44.86	1.35	54.0	9.14	AV	302.00	400	Vertical	Pass
5	11688.612	52.82	-0.71	74.0	21.18	Peak	323.00	400	Vertical	Pass
5**	11688.612	43.54	-0.71	54.0	10.46	AV	323.00	400	Vertical	Pass
6	15174.187	55.60	2.79	74.0	18.40	Peak	19.00	200	Vertical	Pass
6**	15174.187	45.64	2.79	54.0	8.36	AV	19.00	200	Vertical	Pass

GFSK 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	1329.500	44.95	-16.83	74.0	29.05	Peak	161.00	100	Horizontal	Pass
1**	1329.500	32.44	-16.83	54.0	21.56	AV	161.00	100	Horizontal	Pass
2	2441.000	93.18	-9.79	74.0	-19.18	Peak	9.00	200	Horizontal	N/A
2**	2441.000	92.66	-9.79	54.0	-38.66	AV	9.00	200	Horizontal	N/A
3	4922.250	49.91	-3.31	74.0	24.09	Peak	311.00	100	Horizontal	Pass
3**	4922.250	40.24	-3.31	54.0	13.76	AV	311.00	100	Horizontal	Pass
4	7415.250	53.90	0.64	74.0	20.10	Peak	199.00	300	Horizontal	Pass
4**	7415.250	44.09	0.64	54.0	9.91	AV	199.00	300	Horizontal	Pass
5	11554.425	52.37	-1.18	74.0	21.63	Peak	195.00	100	Horizontal	Pass
5**	11554.425	42.67	-1.18	54.0	11.33	AV	195.00	100	Horizontal	Pass
6	17436.938	57.15	5.53	74.0	16.85	Peak	185.00	400	Horizontal	Pass
6**	17436.938	47.29	5.53	54.0	6.71	AV	185.00	400	Horizontal	Pass

GFSK MIDDLE CHANNEL 1 GHz to 18 GHz, ANT V

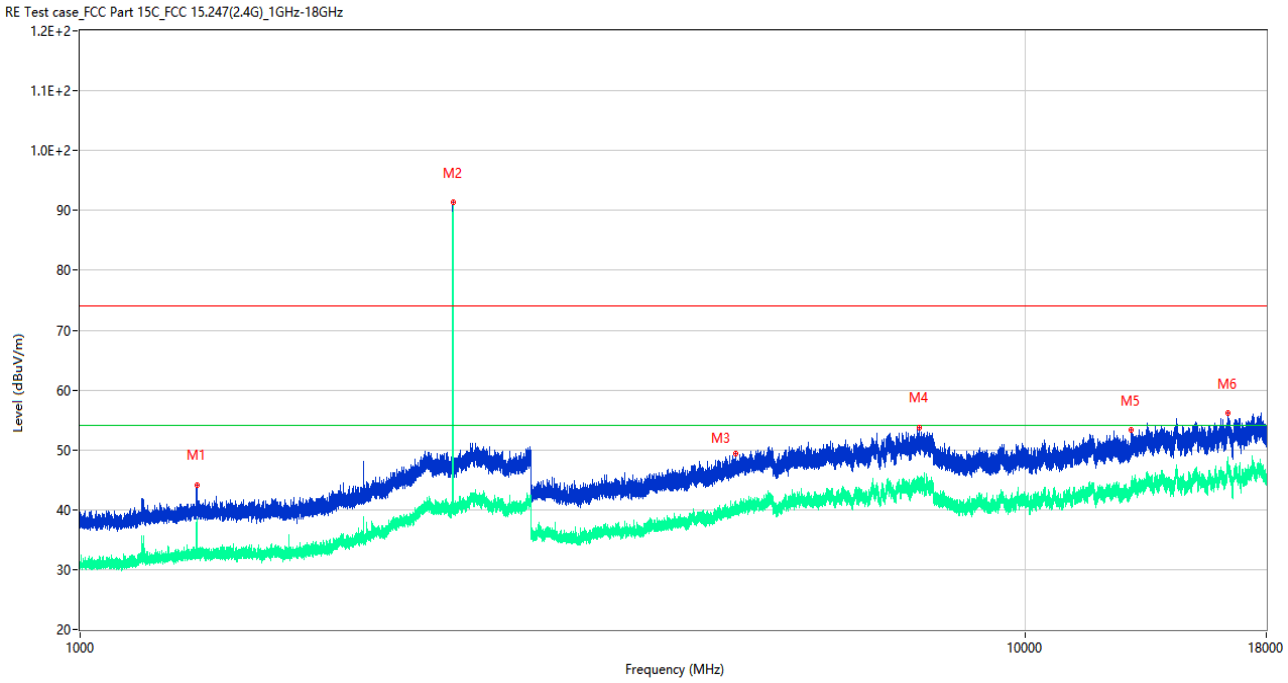


No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1329.500	44.88	-16.83	74.0	29.12	Peak	2.00	400	Vertical	Pass
1**	1329.500	33.27	-16.83	54.0	20.73	AV	2.00	400	Vertical	Pass
2	2440.900	92.63	-9.79	74.0	-18.63	Peak	120.00	200	Vertical	N/A
2**	2440.900	91.39	-9.79	54.0	-37.39	AV	120.00	200	Vertical	N/A
3	4997.250	49.87	-3.18	74.0	24.13	Peak	109.00	150	Vertical	Pass
3**	4997.250	40.65	-3.18	54.0	13.35	AV	109.00	150	Vertical	Pass
4	7609.250	53.48	0.37	74.0	20.52	Peak	240.00	100	Vertical	Pass
4**	7609.250	43.57	0.37	54.0	10.43	AV	240.00	100	Vertical	Pass
5	12003.299	52.66	0.42	74.0	21.34	Peak	100.00	200	Vertical	Pass
5**	12003.299	42.64	0.42	54.0	11.36	AV	100.00	200	Vertical	Pass
6	17440.874	56.25	5.54	74.0	17.75	Peak	43.00	300	Vertical	Pass
6**	17440.874	46.90	5.54	54.0	7.10	AV	43.00	300	Vertical	Pass

GFSK HIGH CHANNEL 1 GHz to 18 GHz, ANT H

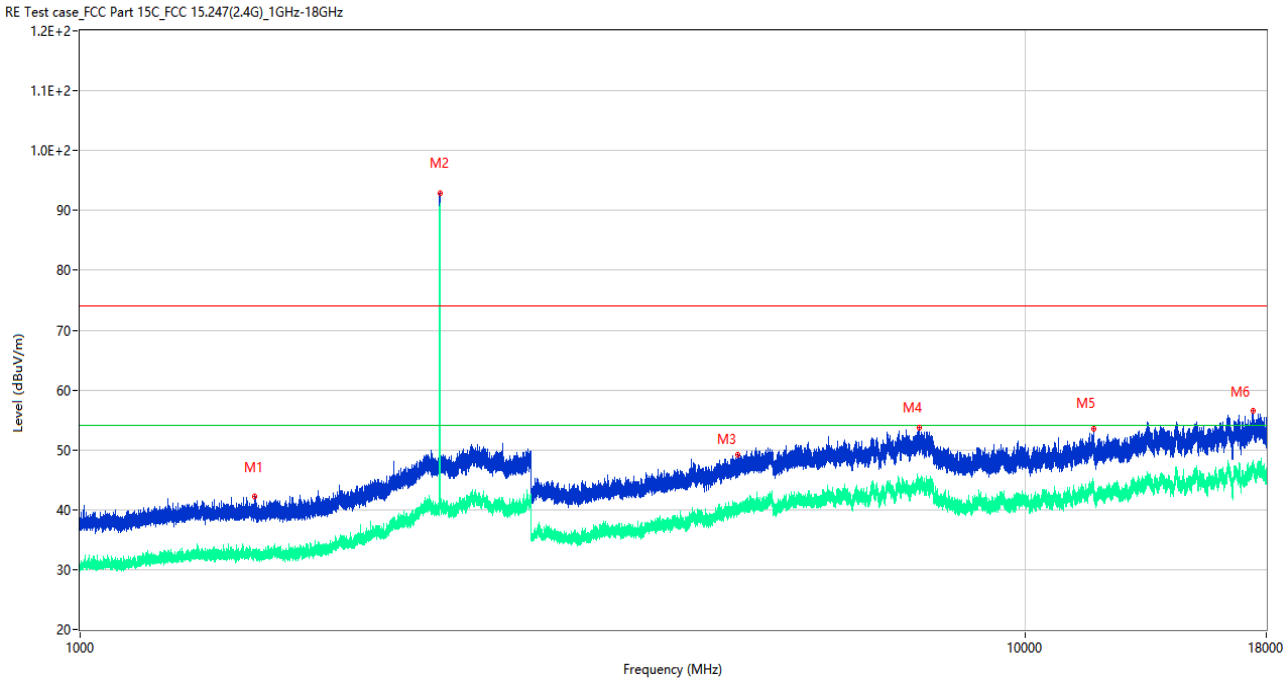
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1333.300	42.06	-17.11	74.0	31.94	Peak	0.00	300	Horizontal	Pass
1**	1333.300	32.98	-17.11	54.0	21.02	AV	0.00	300	Horizontal	Pass
2	2480.000	90.45	-11.11	74.0	-16.45	Peak	226.00	150	Horizontal	N/A
2**	2480.000	89.82	-11.11	54.0	-35.82	AV	226.00	150	Horizontal	N/A
3	4996.250	49.23	-3.32	74.0	24.77	Peak	60.00	150	Horizontal	Pass
3**	4996.250	40.82	-3.32	54.0	13.18	AV	60.00	150	Horizontal	Pass
4	7985.500	53.72	1.58	74.0	20.28	Peak	0.00	300	Horizontal	Pass
4**	7985.500	44.51	1.58	54.0	9.49	AV	0.00	300	Horizontal	Pass
5	12964.987	52.50	1.72	74.0	21.50	Peak	2.00	400	Horizontal	Pass
5**	12964.987	44.80	1.72	54.0	9.20	AV	2.00	400	Horizontal	Pass
6	17403.075	56.77	5.44	74.0	17.23	Peak	114.00	300	Horizontal	Pass
6**	17403.075	47.09	5.44	54.0	6.91	AV	114.00	300	Horizontal	Pass

GFSK HIGH CHANNEL 1 GHz to 18 GHz, ANT V



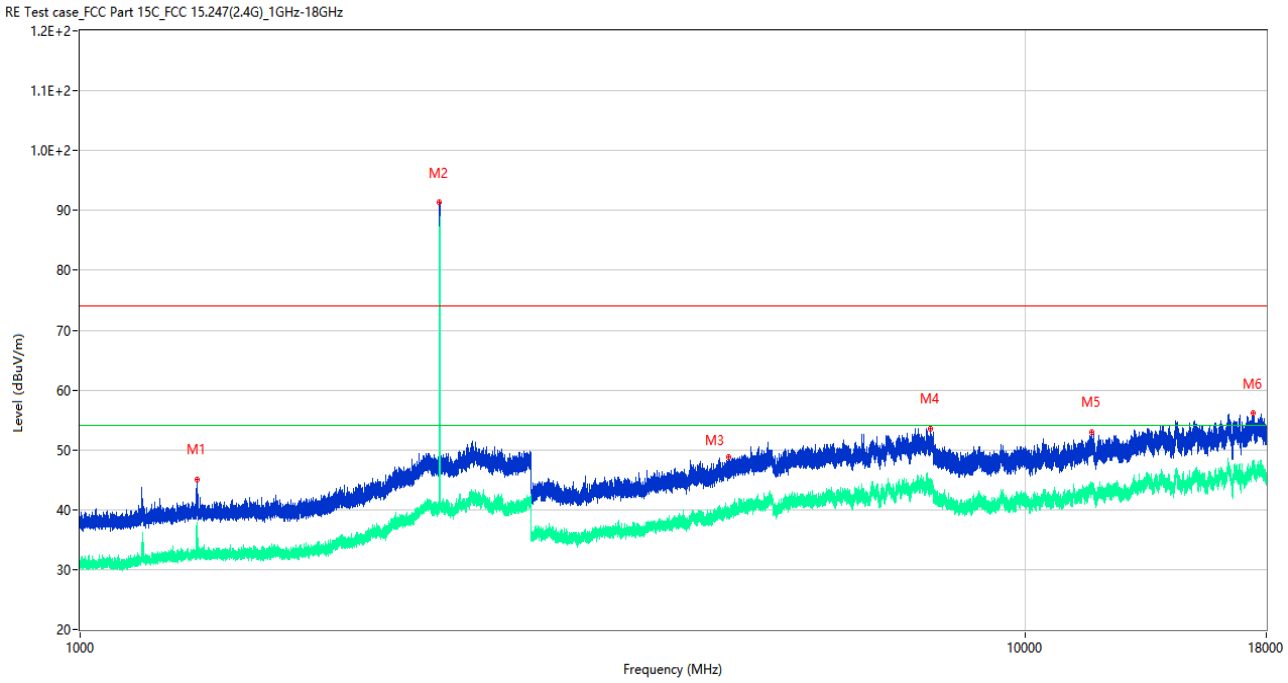
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1329.400	44.10	-16.87	74.0	29.90	Peak	98.00	300	Vertical	Pass
1**	1329.400	34.20	-16.87	54.0	19.80	AV	98.00	300	Vertical	Pass
2	2480.100	91.32	-11.10	74.0	-17.32	Peak	70.00	200	Vertical	N/A
2**	2480.100	90.76	-11.10	54.0	-36.76	AV	70.00	200	Vertical	N/A
3	4937.500	49.38	-3.39	74.0	24.62	Peak	292.00	100	Vertical	Pass
3**	4937.500	40.08	-3.39	54.0	13.92	AV	292.00	100	Vertical	Pass
4	7719.500	53.79	1.10	74.0	20.21	Peak	135.00	100	Vertical	Pass
4**	7719.500	43.58	1.10	54.0	10.42	AV	135.00	100	Vertical	Pass
5	12953.437	53.26	1.61	74.0	20.74	Peak	4.00	200	Vertical	Pass
5**	12953.437	43.39	1.61	54.0	10.61	AV	4.00	200	Vertical	Pass
6	16404.262	56.14	3.11	74.0	17.86	Peak	228.00	200	Vertical	Pass
6**	16404.262	47.44	3.11	54.0	6.56	AV	228.00	200	Vertical	Pass

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



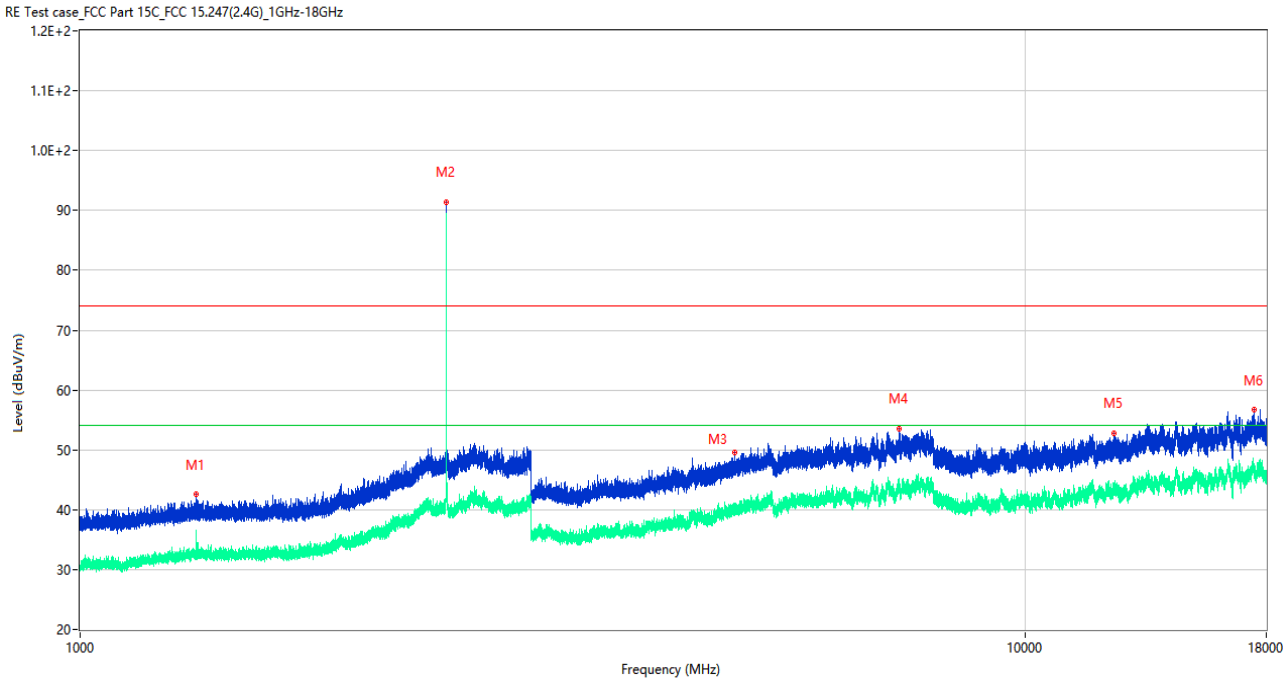
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1529.400	42.18	-17.09	74.0	31.82	Peak	153.00	100	Horizontal	Pass
1**	1529.400	32.52	-17.09	54.0	21.48	AV	153.00	100	Horizontal	Pass
2	2401.800	92.97	-10.63	74.0	-18.97	Peak	218.00	100	Horizontal	N/A
2**	2401.800	91.16	-10.63	54.0	-37.16	AV	218.00	100	Horizontal	N/A
3	4966.000	49.11	-3.53	74.0	24.89	Peak	184.00	150	Horizontal	Pass
3**	4966.000	40.24	-3.53	54.0	13.76	AV	184.00	150	Horizontal	Pass
4	7729.250	53.64	0.49	74.0	20.36	Peak	104.00	200	Horizontal	Pass
4**	7729.250	43.86	0.49	54.0	10.14	AV	104.00	200	Horizontal	Pass
5	11809.974	53.52	-0.26	74.0	20.48	Peak	160.00	200	Horizontal	Pass
5**	11809.974	43.75	-0.26	54.0	10.25	AV	160.00	200	Horizontal	Pass
6	17453.214	56.54	5.51	74.0	17.46	Peak	273.00	200	Horizontal	Pass
6**	17453.214	47.29	5.51	54.0	6.71	AV	273.00	200	Horizontal	Pass

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



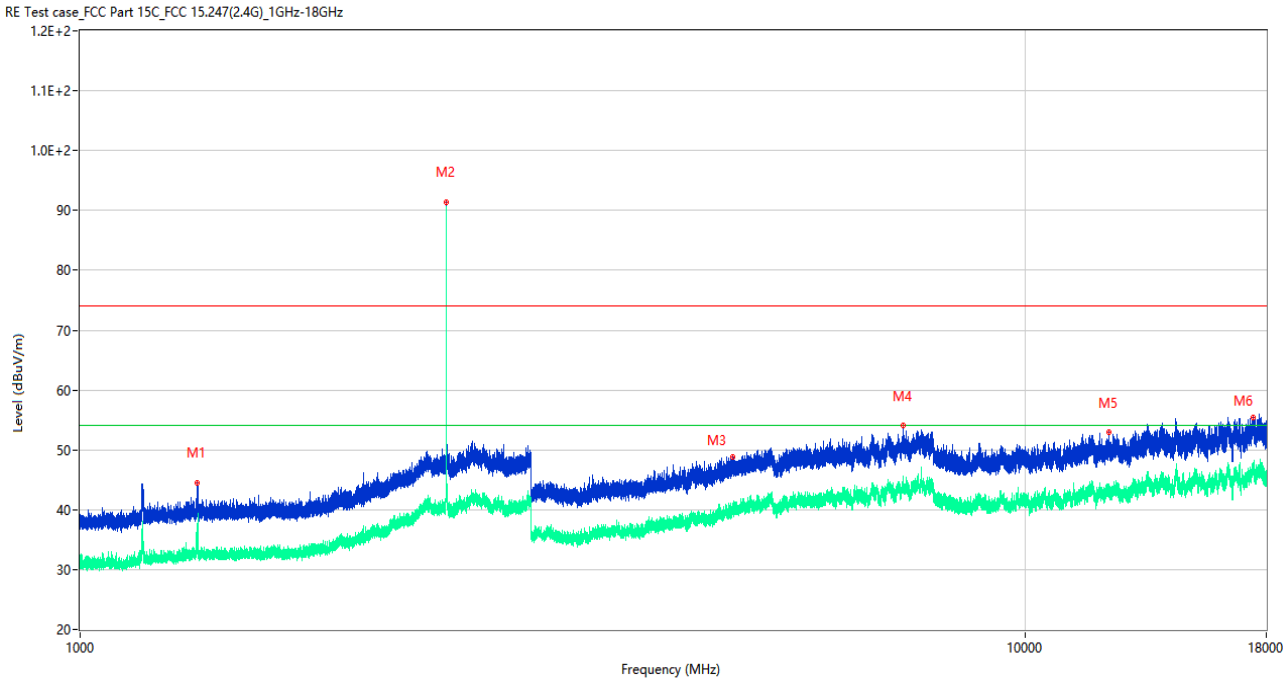
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1328.900	45.05	-16.94	74.0	28.95	Peak	229.00	200	Vertical	Pass
1**	1328.900	33.24	-16.94	54.0	20.76	AV	229.00	200	Vertical	Pass
2	2401.700	91.33	-10.63	74.0	-17.33	Peak	118.00	100	Vertical	N/A
2**	2401.700	87.04	-10.63	54.0	-33.04	AV	118.00	100	Vertical	N/A
3	4857.000	48.90	-3.50	74.0	25.10	Peak	97.00	200	Vertical	Pass
3**	4857.000	39.18	-3.50	54.0	14.82	AV	97.00	200	Vertical	Pass
4	7931.750	53.61	2.05	74.0	20.39	Peak	182.00	200	Vertical	Pass
4**	7931.750	43.91	2.05	54.0	10.09	AV	182.00	200	Vertical	Pass
5	11755.588	53.00	-0.19	74.0	21.00	Peak	209.00	100	Vertical	Pass
5**	11755.588	43.54	-0.19	54.0	10.46	AV	209.00	100	Vertical	Pass
6	17427.751	56.11	5.51	74.0	17.89	Peak	360.00	300	Vertical	Pass
6**	17427.751	47.01	5.51	54.0	6.99	AV	360.00	300	Vertical	Pass

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



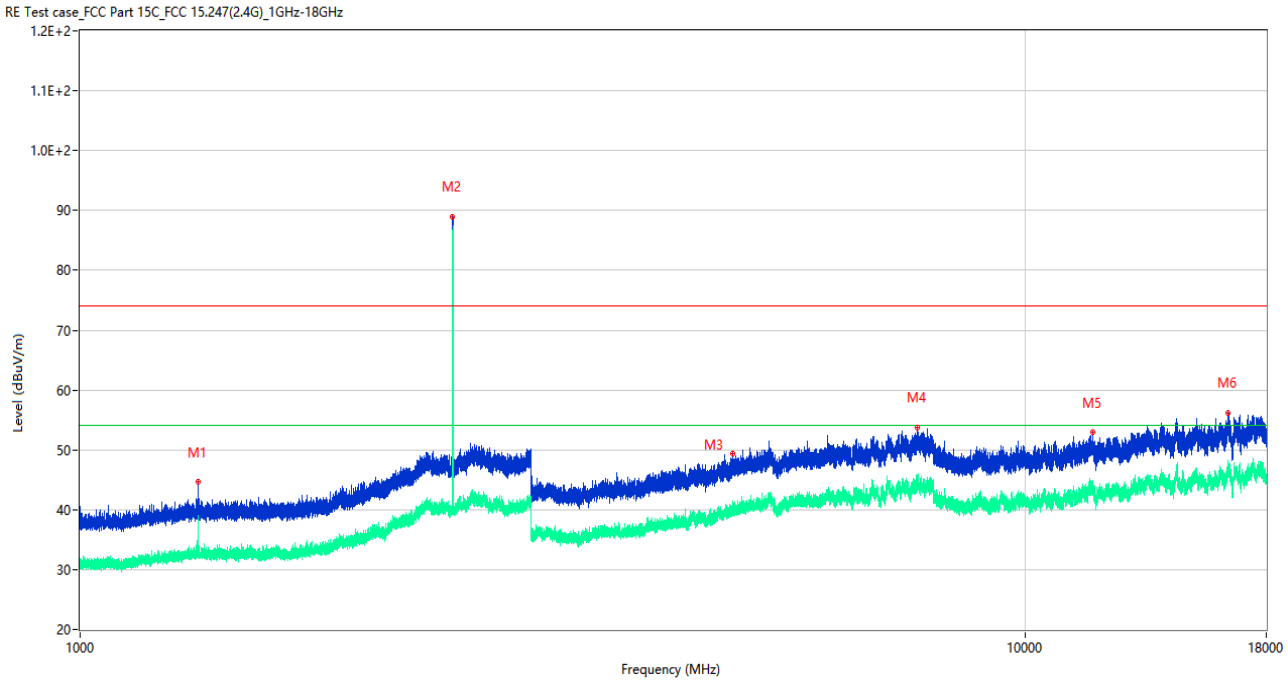
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1328.000	42.53	-16.96	74.0	31.47	Peak	119.00	400	Horizontal	Pass
1**	1328.000	35.92	-16.96	54.0	18.08	AV	119.00	400	Horizontal	Pass
2	2441.000	91.46	-9.79	74.0	-17.46	Peak	15.00	200	Horizontal	N/A
2**	2441.000	89.45	-9.79	54.0	-35.45	AV	15.00	200	Horizontal	N/A
3	4932.500	49.52	-3.38	74.0	24.48	Peak	41.00	100	Horizontal	Pass
3**	4932.500	40.18	-3.38	54.0	13.82	AV	41.00	100	Horizontal	Pass
4	7359.500	53.61	0.87	74.0	20.39	Peak	360.00	400	Horizontal	Pass
4**	7359.500	43.73	0.87	54.0	10.27	AV	360.00	400	Horizontal	Pass
5	12409.900	52.81	1.09	74.0	21.19	Peak	194.00	300	Horizontal	Pass
5**	12409.900	43.04	1.09	54.0	10.96	AV	194.00	300	Horizontal	Pass
6	17455.837	56.64	5.46	74.0	17.36	Peak	26.00	100	Horizontal	Pass
6**	17455.837	46.66	5.46	54.0	7.34	AV	26.00	100	Horizontal	Pass

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



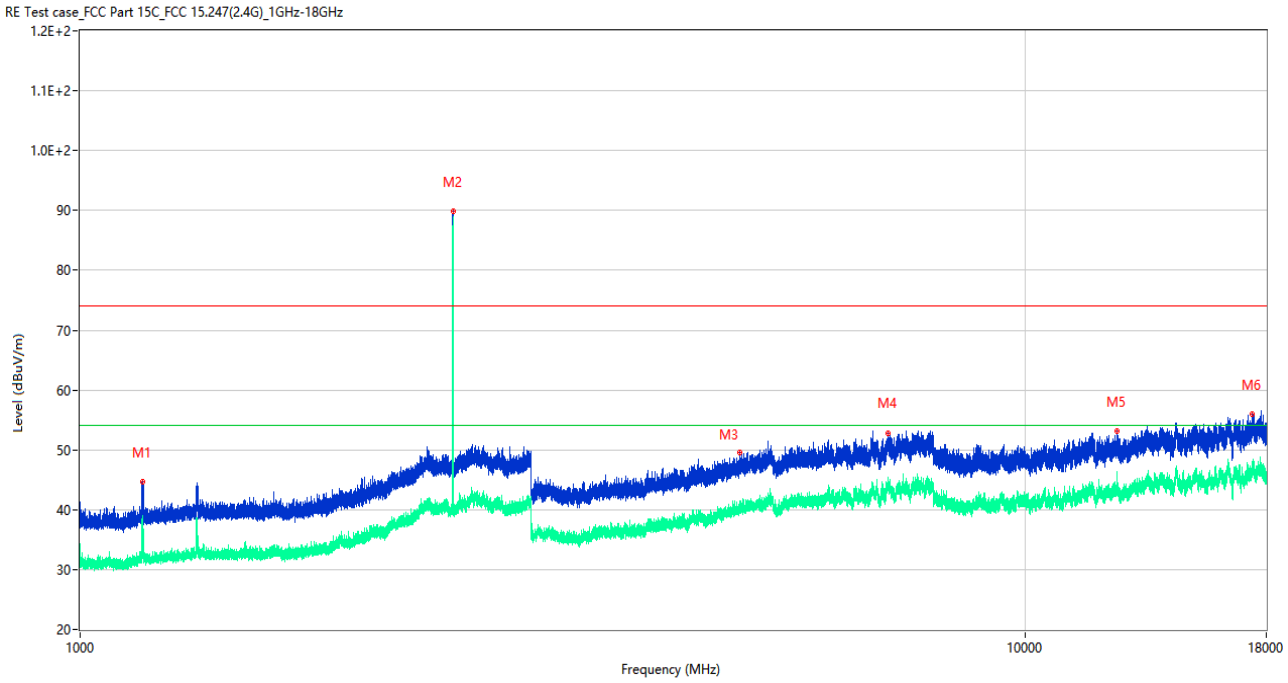
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1329.700	44.52	-16.79	74.0	29.48	Peak	230.00	200	Vertical	Pass
1**	1329.700	36.68	-16.79	54.0	17.32	AV	230.00	200	Vertical	Pass
2	2440.800	91.42	-9.79	74.0	-17.42	Peak	145.00	200	Vertical	N/A
2**	2440.800	89.44	-9.79	54.0	-35.44	AV	145.00	200	Vertical	N/A
3	4902.500	48.89	-3.10	74.0	25.11	Peak	147.00	100	Vertical	Pass
3**	4902.500	40.08	-3.10	54.0	13.92	AV	147.00	100	Vertical	Pass
4	7427.500	54.02	1.29	74.0	19.98	Peak	60.00	300	Vertical	Pass
4**	7427.500	44.39	1.29	54.0	9.61	AV	60.00	300	Vertical	Pass
5	12256.238	52.87	1.04	74.0	21.13	Peak	343.00	100	Vertical	Pass
5**	12256.238	43.87	1.04	54.0	10.13	AV	343.00	100	Vertical	Pass
6	17445.075	55.44	5.55	74.0	18.56	Peak	-1.00	300	Vertical	Pass
6**	17445.075	47.71	5.55	54.0	6.29	AV	-1.00	300	Vertical	Pass

8-DPSK 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	1333.100	44.63	-17.17	74.0	29.37	Peak	113.00	400	Horizontal	Pass
1**	1333.100	32.23	-17.17	54.0	21.77	AV	113.00	400	Horizontal	Pass
2	2479.700	88.97	-11.16	74.0	-14.97	Peak	15.00	100	Horizontal	N/A
2**	2479.700	86.53	-11.16	54.0	-32.53	AV	15.00	100	Horizontal	N/A
3	4901.250	49.43	-3.29	74.0	24.57	Peak	330.00	200	Horizontal	Pass
3**	4901.250	39.59	-3.29	54.0	14.41	AV	330.00	200	Horizontal	Pass
4	7690.000	53.72	1.28	74.0	20.28	Peak	360.00	100	Horizontal	Pass
4**	7690.000	44.17	1.28	54.0	9.83	AV	360.00	100	Horizontal	Pass
5	11793.350	52.93	-0.15	74.0	21.07	Peak	43.00	300	Horizontal	Pass
5**	11793.350	43.34	-0.15	54.0	10.66	AV	43.00	300	Horizontal	Pass
6	16401.375	56.25	3.15	74.0	17.75	Peak	65.00	400	Horizontal	Pass
6**	16401.375	47.64	3.15	54.0	6.36	AV	65.00	400	Horizontal	Pass

8-DPSK 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	1165.600	44.66	-17.48	74.0	29.34	Peak	78.00	300	Vertical	Pass
1**	1165.600	36.36	-17.48	54.0	17.64	AV	78.00	300	Vertical	Pass
2	2480.100	89.79	-11.10	74.0	-15.79	Peak	68.00	200	Vertical	N/A
2**	2480.100	88.78	-11.10	54.0	-34.78	AV	68.00	200	Vertical	N/A
3	4993.500	49.56	-3.10	74.0	24.44	Peak	275.00	200	Vertical	Pass
3**	4993.500	40.47	-3.10	54.0	13.53	AV	275.00	200	Vertical	Pass
4	7156.250	52.73	0.12	74.0	21.27	Peak	301.00	200	Vertical	Pass
4**	7156.250	43.73	0.12	54.0	10.27	AV	301.00	200	Vertical	Pass
5	12500.150	53.13	1.44	74.0	20.87	Peak	9.00	200	Vertical	Pass
5**	12500.150	46.37	1.44	54.0	7.63	AV	9.00	200	Vertical	Pass
6	17389.427	55.95	4.93	74.0	18.05	Peak	72.00	400	Vertical	Pass
6**	17389.427	47.04	4.93	54.0	6.96	AV	72.00	400	Vertical	Pass

5.11 Band Edge (Restricted-band band-edge)

5.11.1 Limit

FCC §15.209&15.247(d)

Radiated emission outside the frequency band attenuation below the general limits specified in FCC section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in FCC section 15.205(a), must also comply with the radiated emission limits specified in FCC section 15.209(a).

5.11.2 Test Setup

See section 4.5.3 to 4.5.5 for test setup description for the antenna port. The photo of test setup please refer to ANNEX A.

5.11.3 Test Procedure

The measurement frequency range is from 9 kHz to the 10th harmonic of the fundamental frequency. The Turn Table is actuated to turn from 0° to 360°, and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. Mid channels on all channel bandwidth verified. Only the worst RB size/offset presented.

The power of the EUT transmitting frequency should be ignored.

All Spurious Emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

Use the following spectrum analyzer settings:

Span = wide enough to fully capture the emission being measured
RBW = 1 MHz for f ≥ 1 GHz, 100 kHz for f < 1 GHz
VBW ≥ RBW
Sweep = auto
Detector function = peak
Trace = max hold

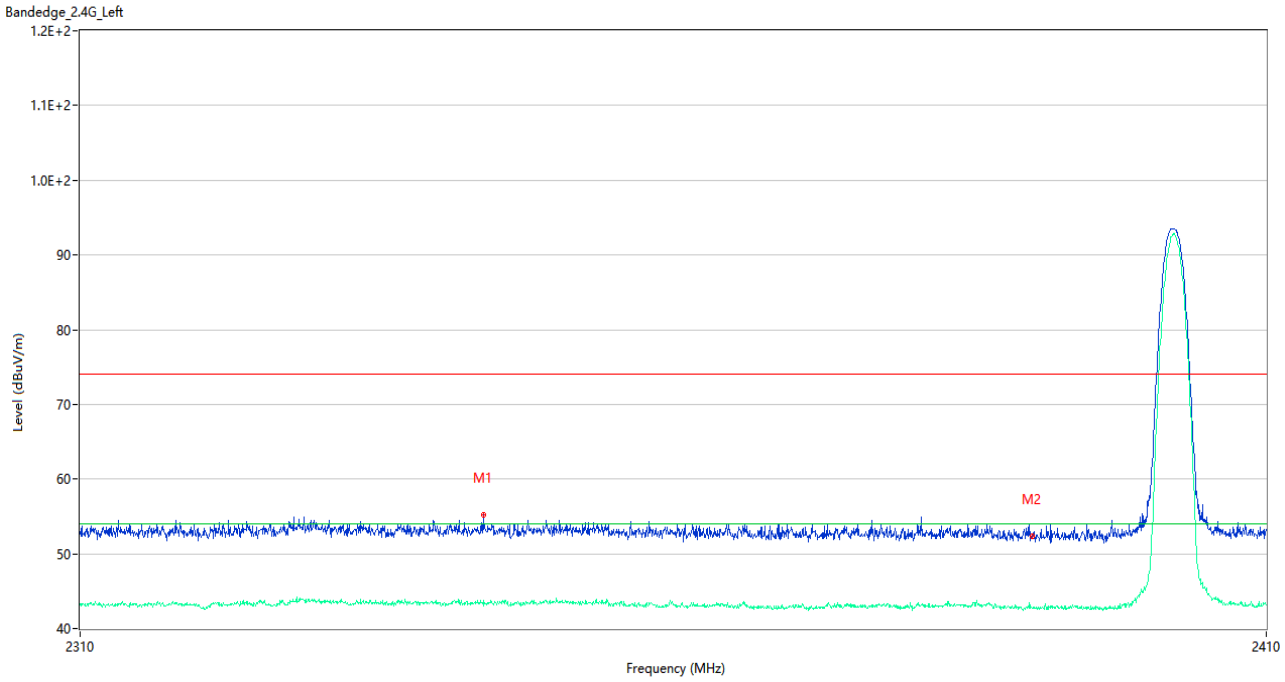
For measurement below 1GHz, If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported, Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

5.11.4 Test Result

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.

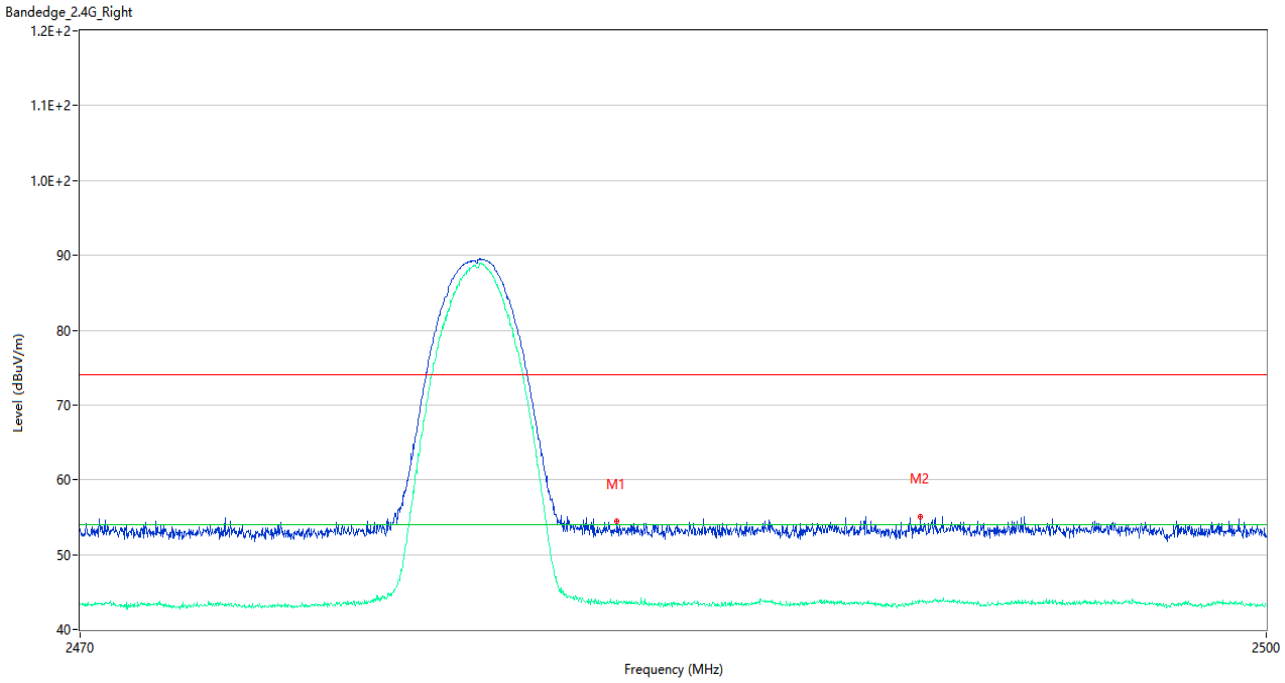
Test Data and Plots

GFSK LOW CHANNEL



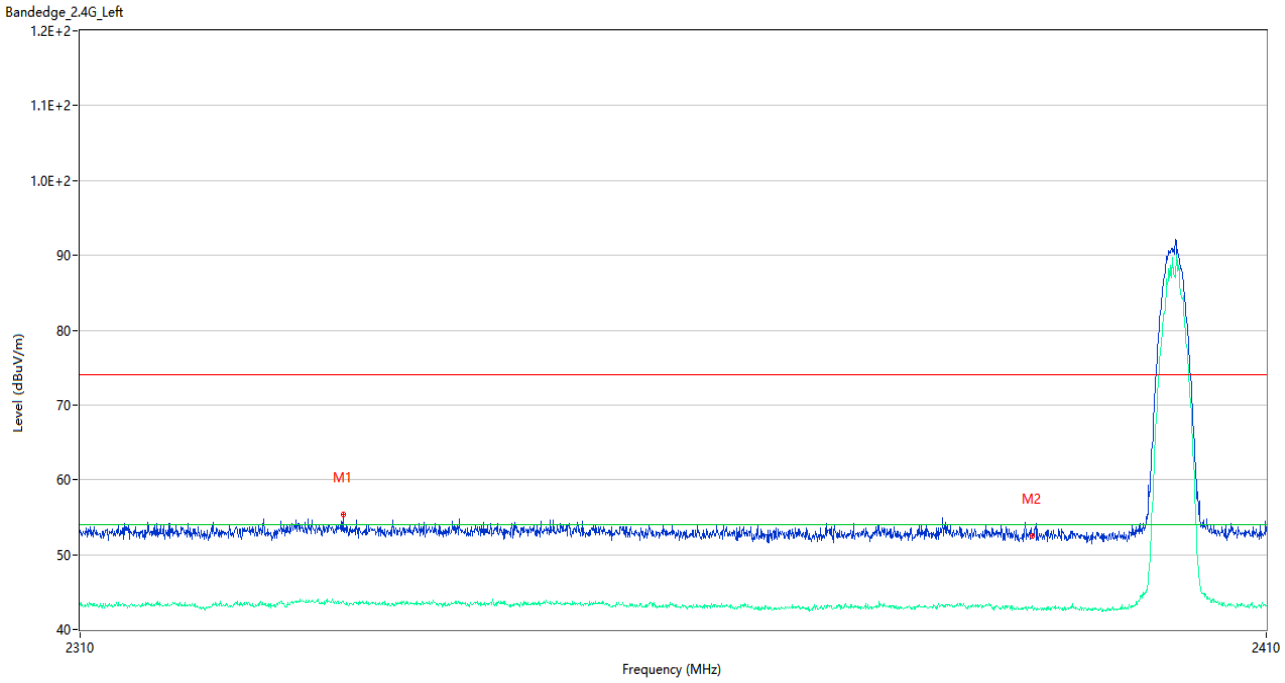
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2343.500	55.14	-1.04	74.0	18.86	Peak	111.00	100	Horizontal	Pass
1**	2343.500	43.75	-1.04	54.0	10.25	AV	111.00	100	Horizontal	Pass
2	2389.950	52.31	-1.82	74.0	21.69	Peak	78.00	200	Horizontal	Pass
2**	2389.950	42.75	-1.82	54.0	11.25	AV	78.00	200	Horizontal	Pass

GFSK HIGH CHANNEL



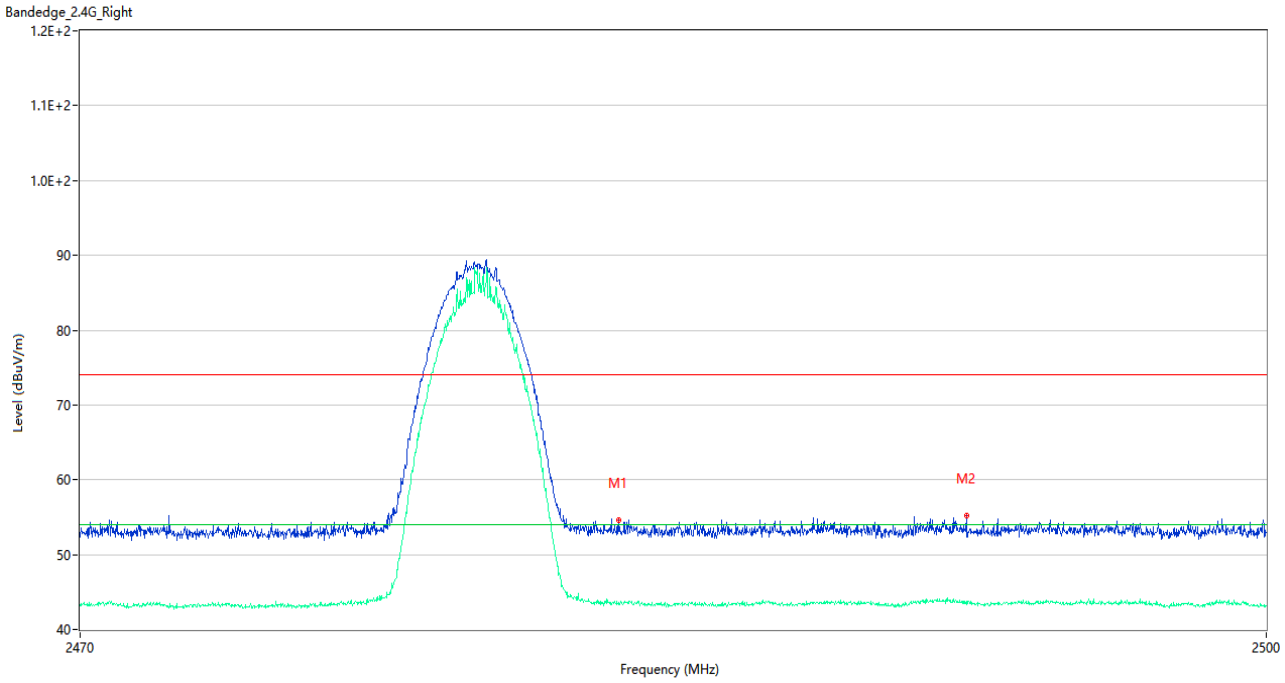
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2483.530	54.50	-1.10	74.0	19.50	Peak	332.00	150	Horizontal	Pass
1**	2483.530	43.87	-1.10	54.0	10.13	AV	332.00	150	Horizontal	Pass
2	2491.225	55.14	-0.80	74.0	18.86	Peak	83.00	150	Horizontal	Pass
2**	2491.225	43.69	-0.80	54.0	10.31	AV	83.00	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	2331.800	55.32	-0.86	74.0	18.68	Peak	37.00	150	Horizontal	Pass
1**	2331.800	43.74	-0.86	54.0	10.26	AV	37.00	150	Horizontal	Pass
2	2389.950	52.46	-1.82	74.0	21.54	Peak	98.00	200	Horizontal	Pass
2**	2389.950	42.87	-1.82	54.0	11.13	AV	98.00	200	Horizontal	Pass

8-DPSK HIGH CHANNEL



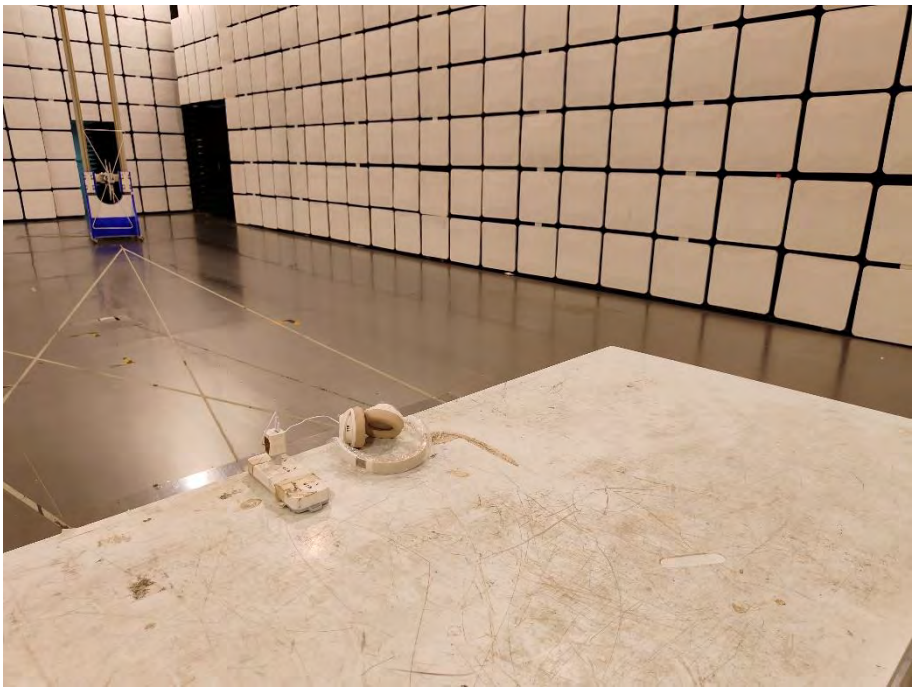
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2483.590	54.56	-1.09	74.0	19.44	Peak	37.00	100	Horizontal	Pass
1**	2483.590	43.61	-1.09	54.0	10.39	AV	37.00	100	Horizontal	Pass
2	2492.380	55.21	-0.88	74.0	18.79	Peak	360.00	200	Horizontal	Pass
2**	2492.380	43.25	-0.88	54.0	10.75	AV	360.00	200	Horizontal	Pass

ANNEX A TEST SETUP PHOTOS

1 Radiated Test Photo

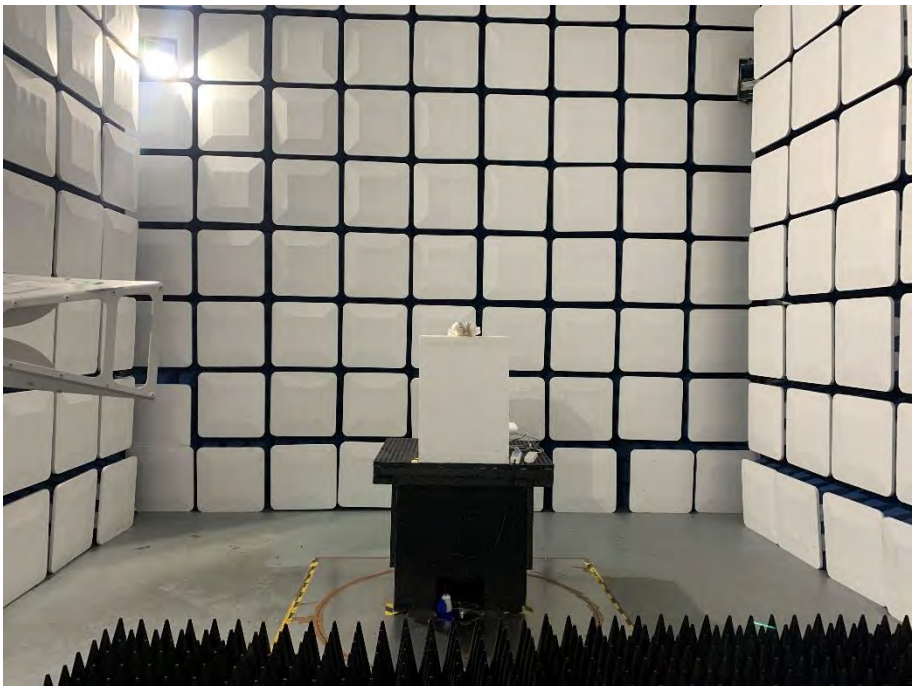
Below 30MHz

30MHz-1GHz

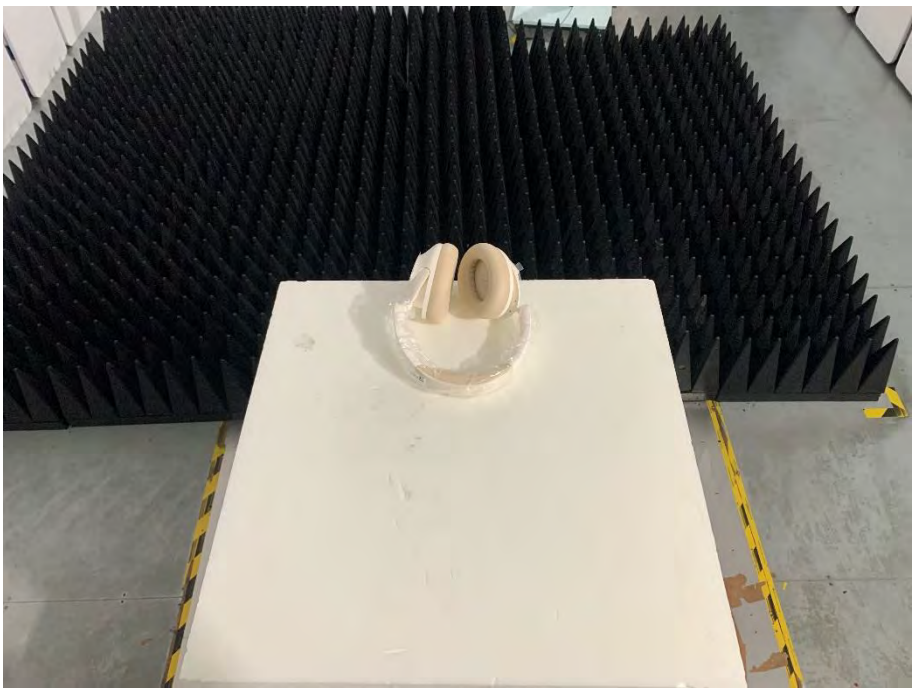


Close-up

Above 1GHz

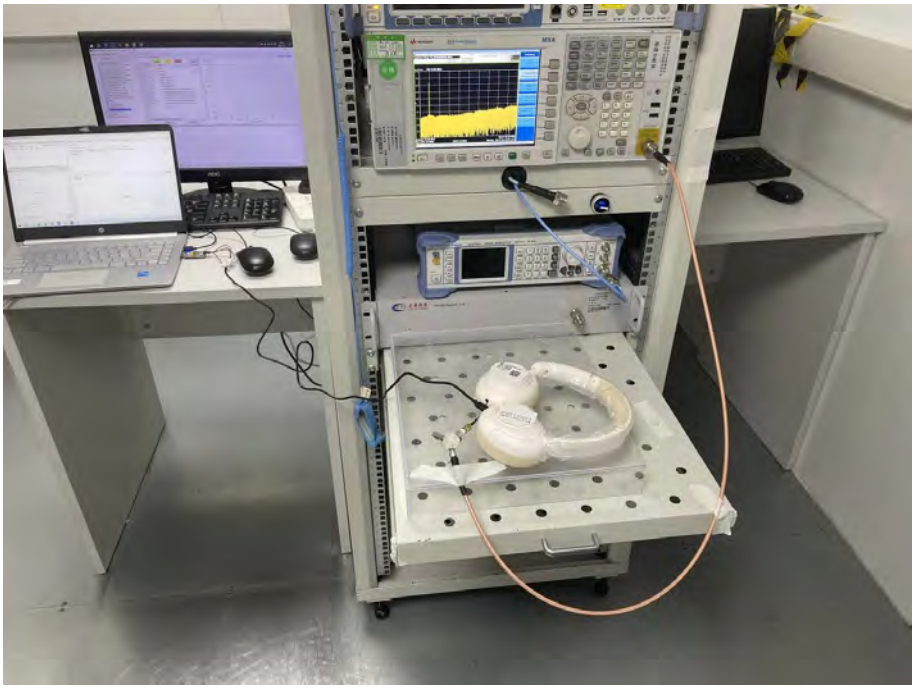


Close-up



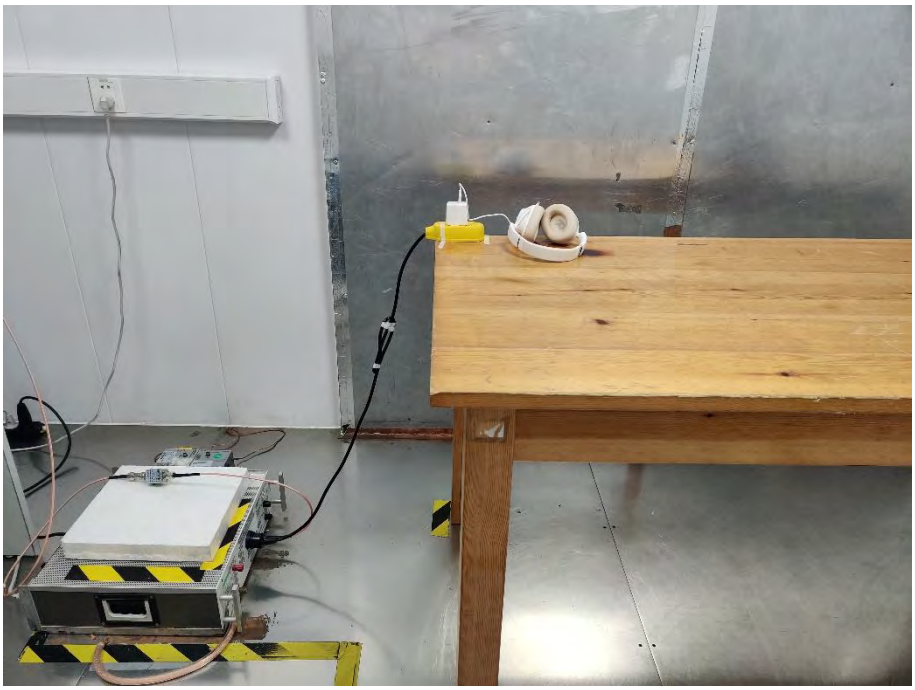
2 Conducted Test Photo

Conducted Test



3 Conducted Emissions

Test Photo 1



Test Photo 2

ANNEX B EUT EXTERNAL PHOTOS

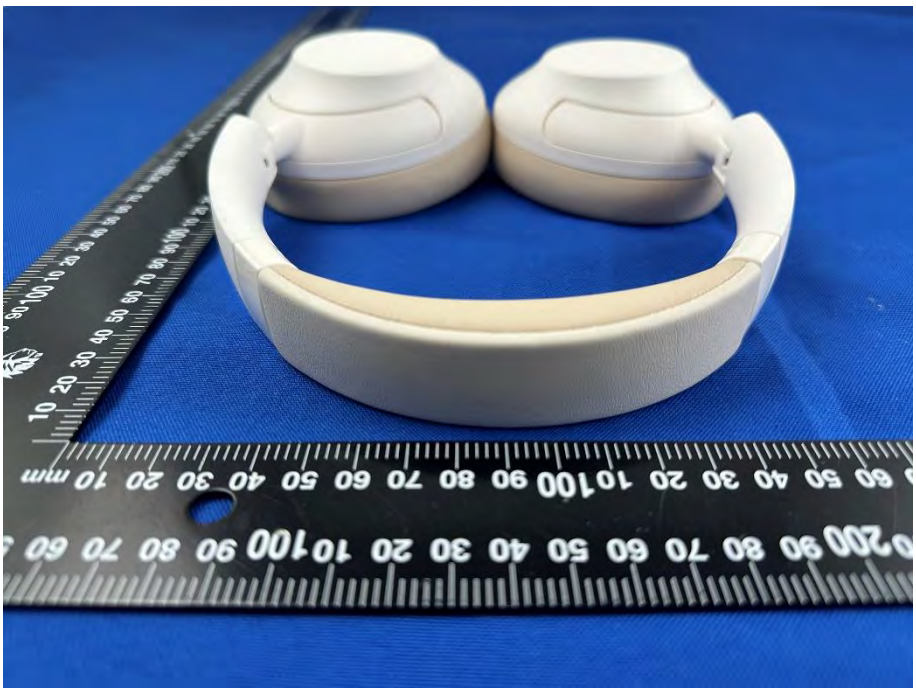
FRONT VIEW OF EUT

REAR VIEW OF EUT

LEFT VIEW OF EUT

RIGHT VIEW OF EUT

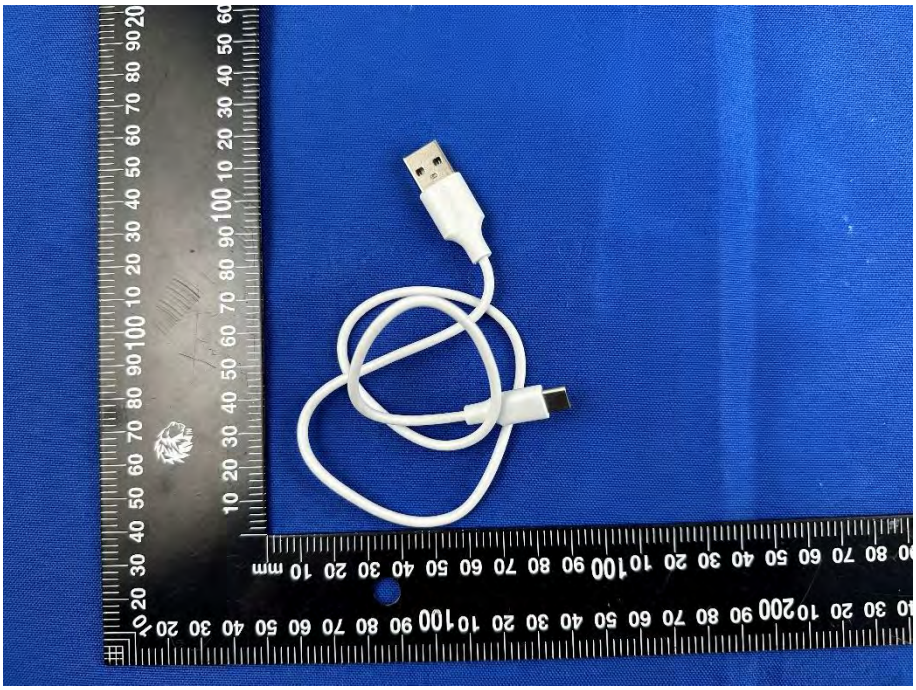
TOP VIEW OF EUT



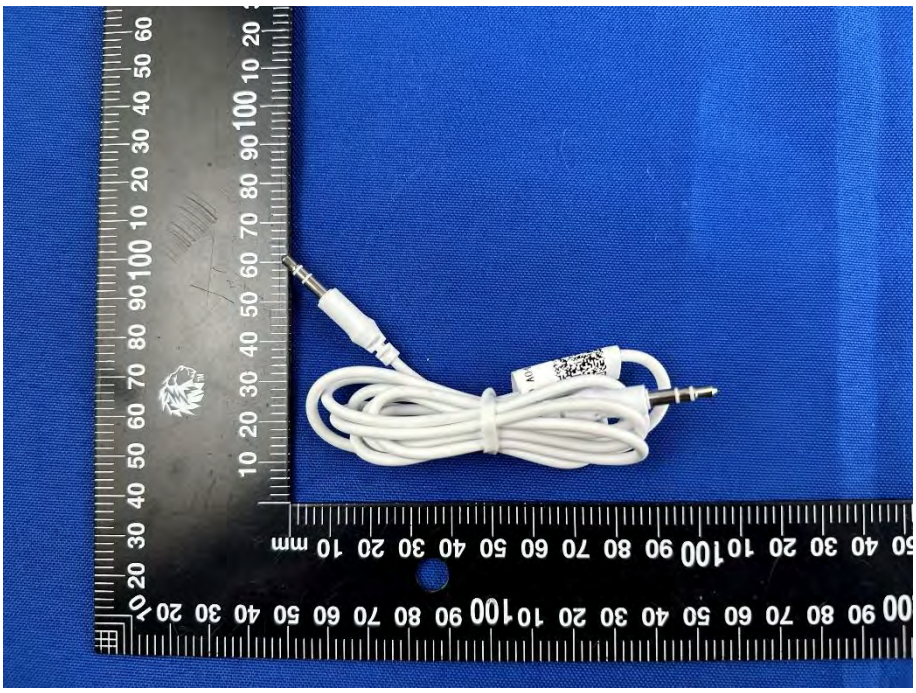
BOTTOM VIEW OF EUT

Black

Accessory-Type-C Cable



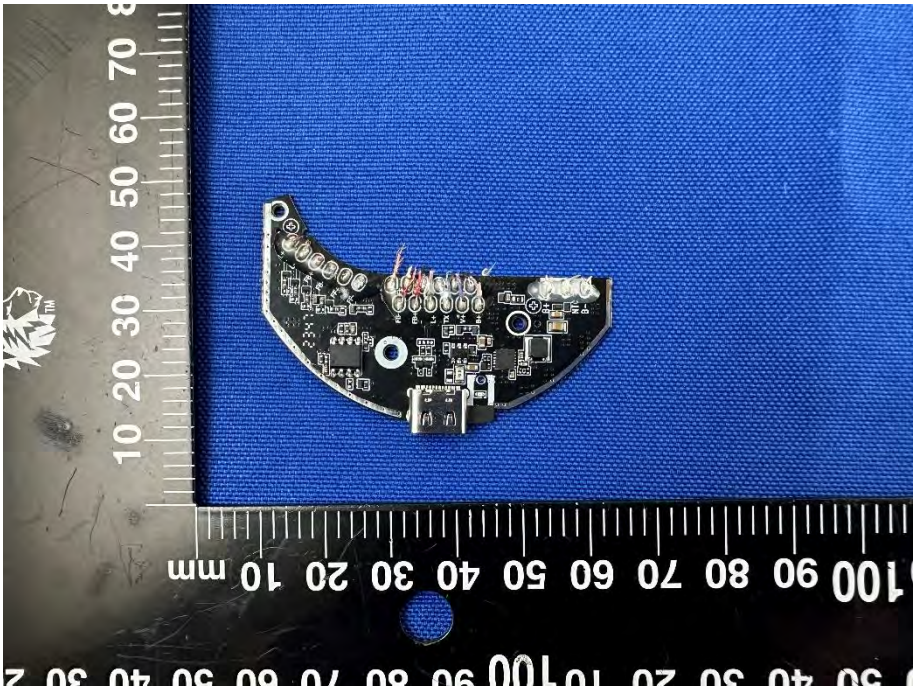
Accessory-AUX Cable



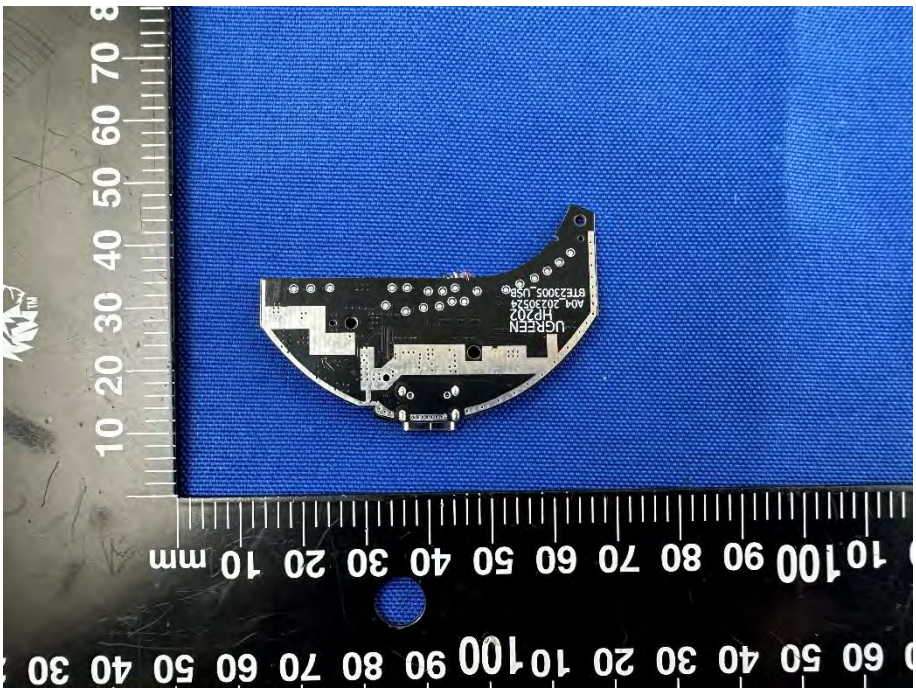
ANNEX C EUT INTERNAL PHOTOS

EUT UNCOVER VIEW 1

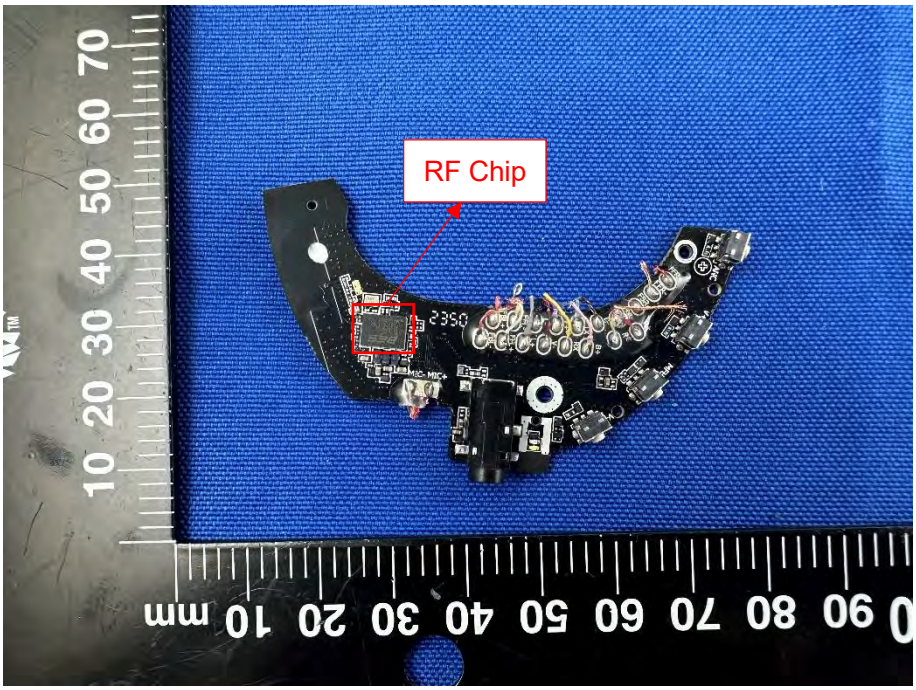
MAIN BOARD TOP VIEW



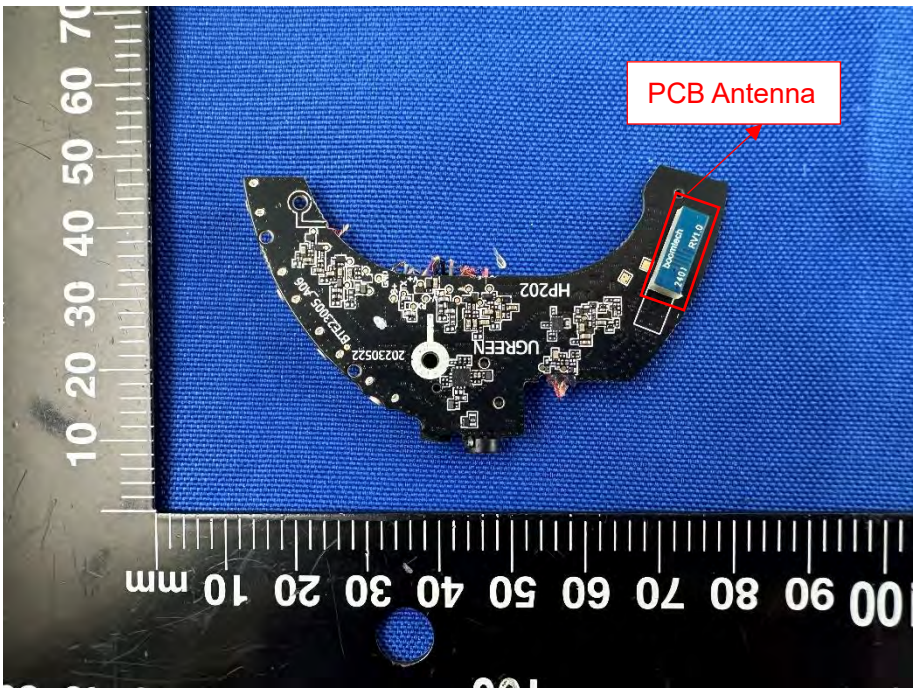
MAIN BOARD REAR VIEW



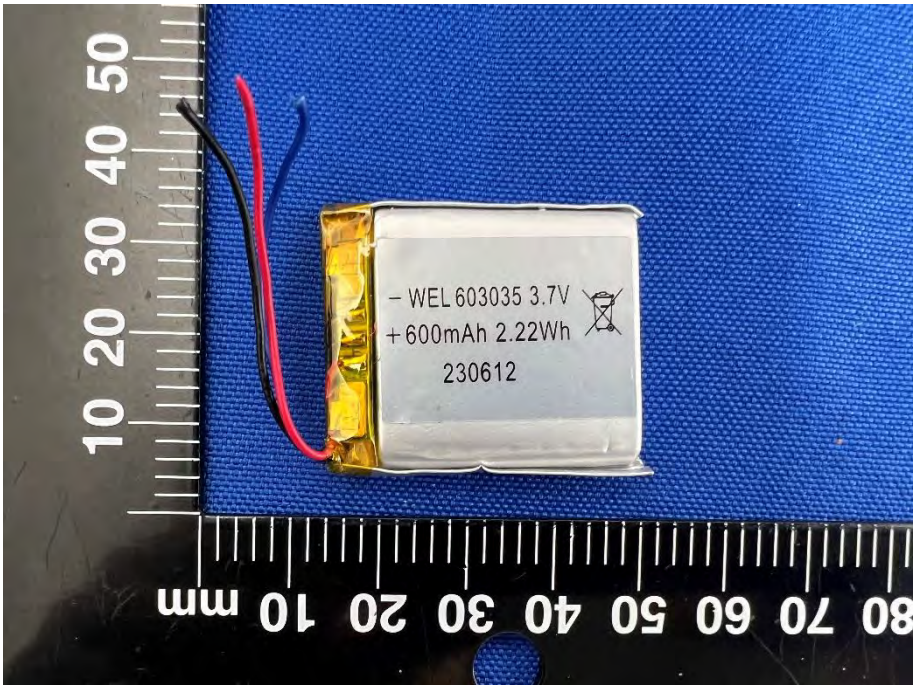
SECONDARY BOARD 1 TOP VIEW



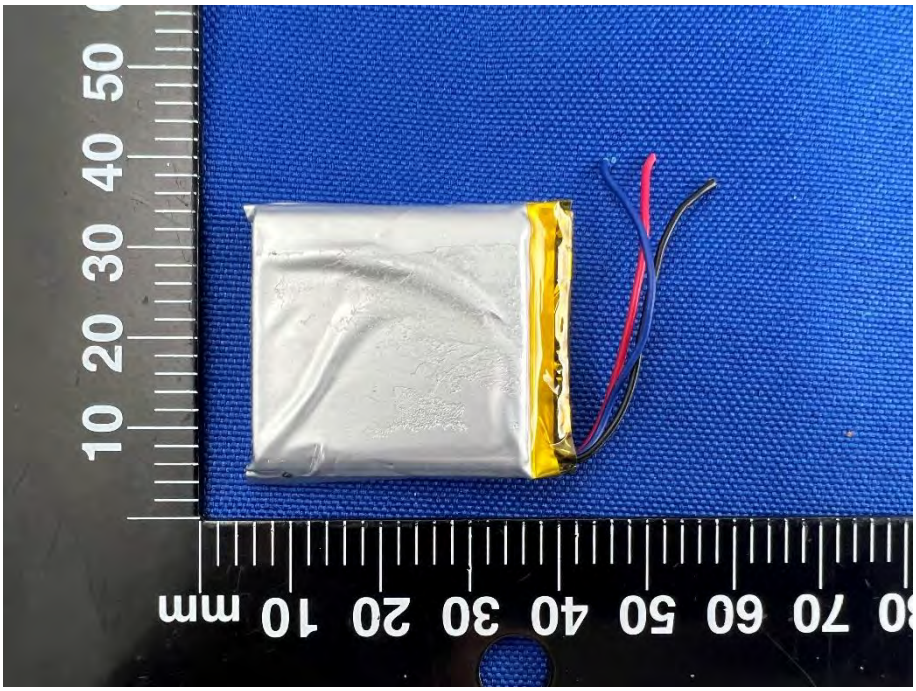
SECONDARY BOARD 1 REAR VIEW



BATTERY (FRONT)



BATTERY (REAR)



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4. This report is invalid if it is altered, without the signature of the testing and approval personnel, or without the “inspection and testing dedicated stamp” or test report stamp.
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--END OF REPORT--