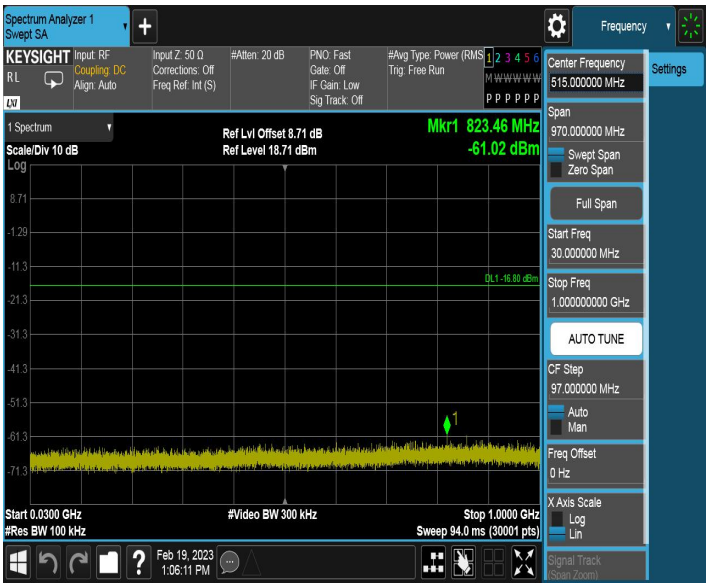
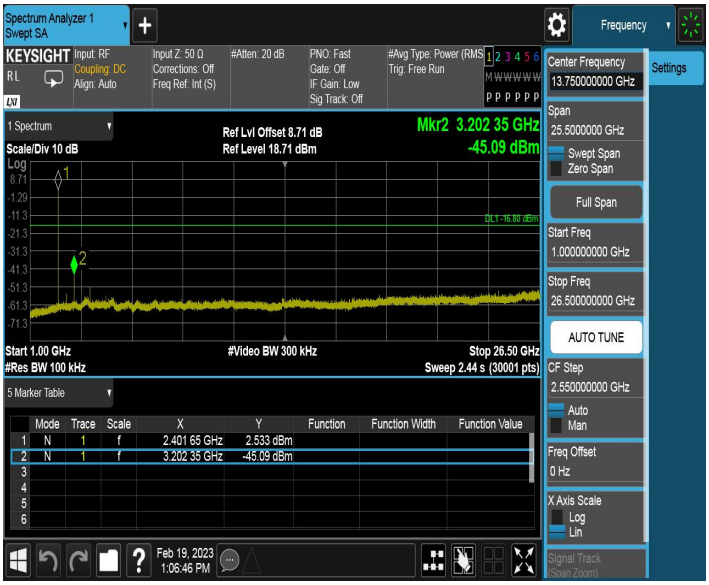
BLE_2M_Ant1_2402_0~Reference

BLE_2M_Ant1_2402_30~1000

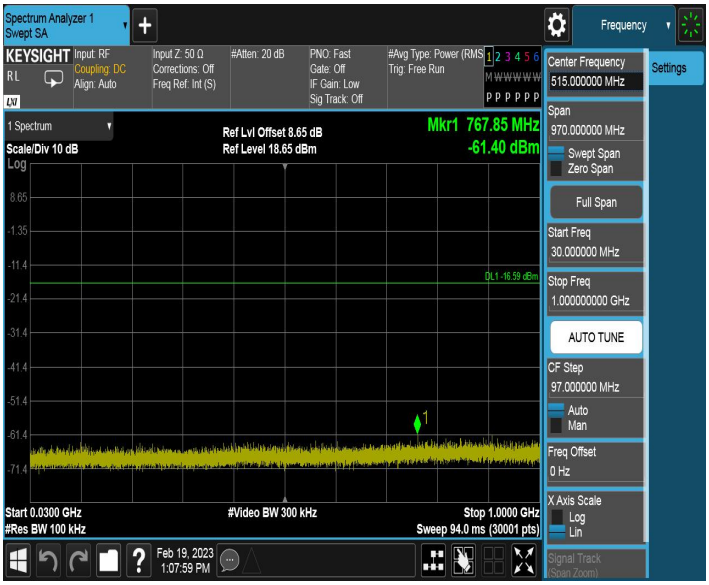


BLE_2M_Ant1_2402_1000~26500

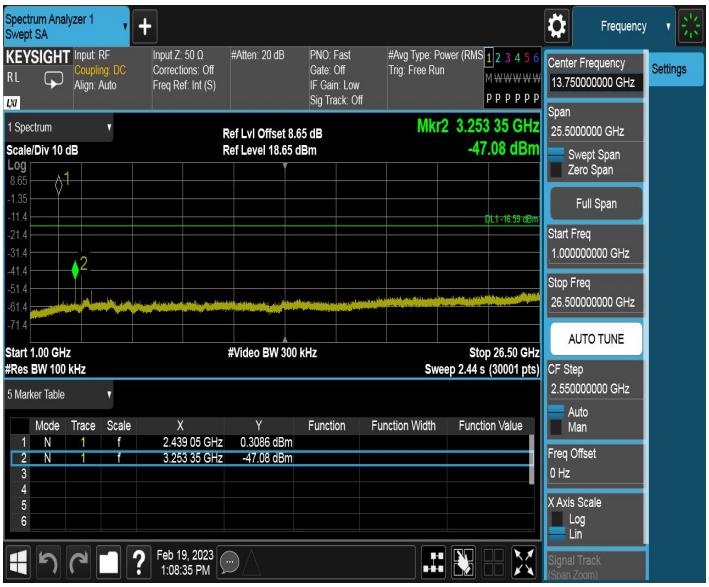


BLE_2M_Ant1_2440_0~Reference

BLE_2M_Ant1_2440_30~1000

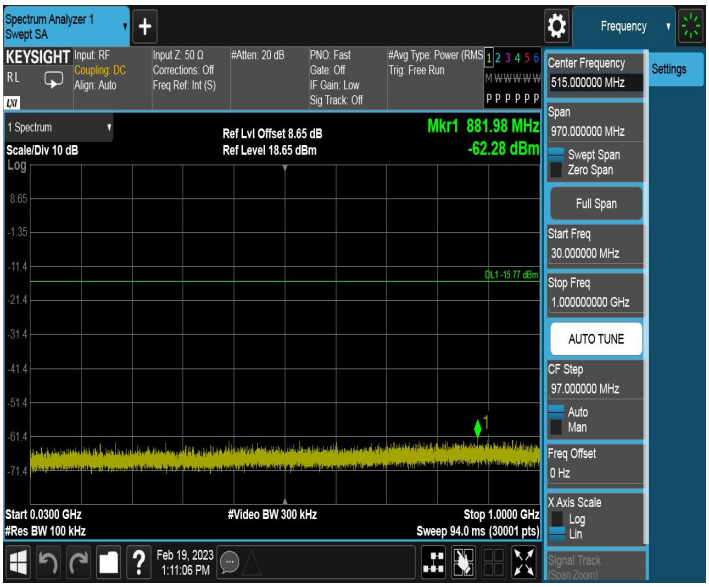


BLE_2M_Ant1_2440_1000~26500

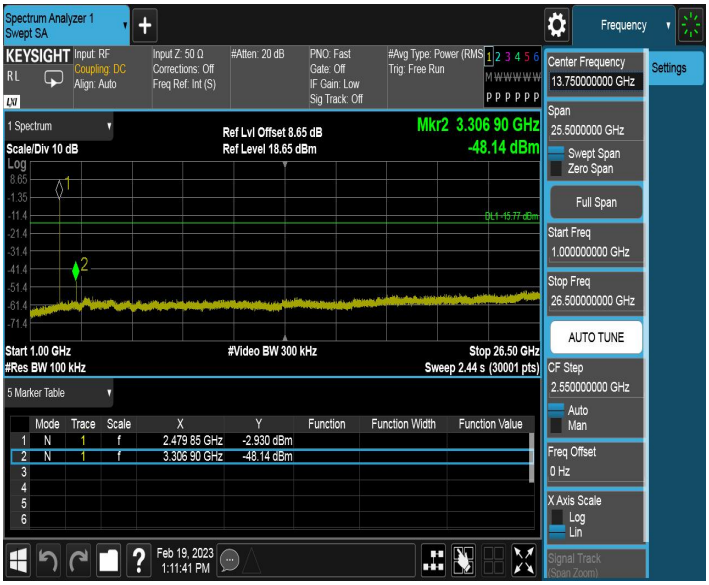


BLE_2M_Ant1_2480_0~Reference

BLE_2M_Ant1_2480_30~1000



BLE_2M_Ant1_2480_1000~26500



7.6. Radiated Spurious Emission Measurement

7.6.1. Test Limit

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR must not exceed the limits shown in Table per Section 15.209.

FCC Part 15 Subpart C Paragraph 15.209		
Frequency [MHz]	Field Strength [uV/m]	Measured Distance [Meters]
0.009 – 0.490	2400/F (kHz)	300
0.490 – 1.705	24000/F (kHz)	30
1.705 - 30	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

7.6.2. Test Procedure Used

ANSI C63.10-2013 – Section 6.6.4.3

7.6.3. Test Setting

Peak Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = as specified in Table 1
3. VBW = 3MHz
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

Table 1 - RBW as a function of frequency

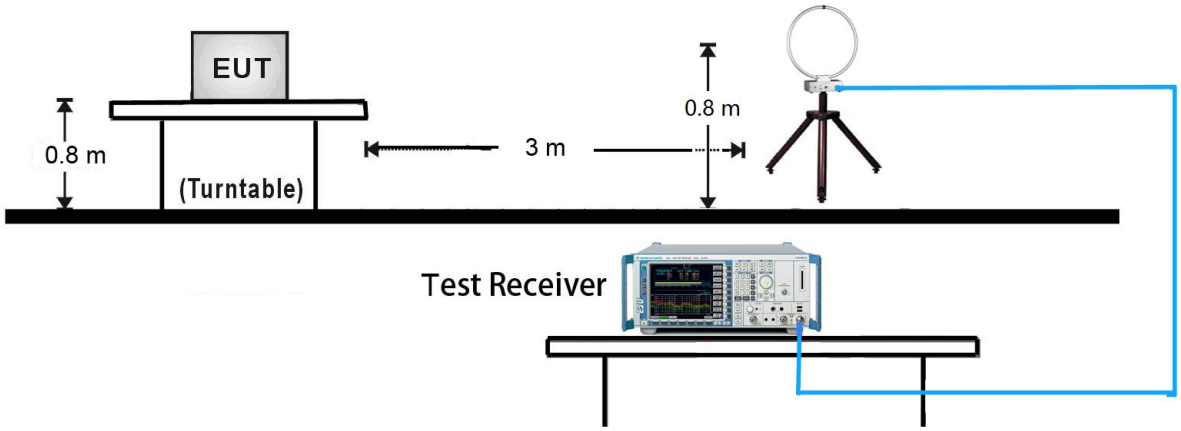
Frequency	RBW
9 ~ 150 kHz	200 ~ 300 Hz
0.15 ~ 30 MHz	9 ~ 10 kHz
30 ~ 1000 MHz	100 ~ 120 kHz
> 1000 MHz	1 MHz

Average Field Strength Measurements

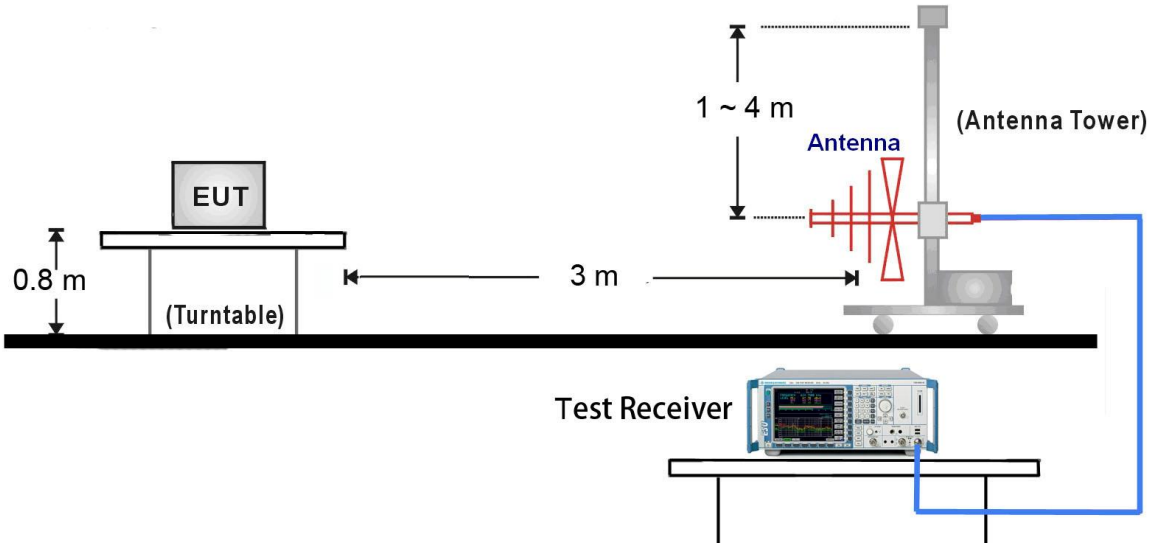
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = Power Average (RMS)
5. Number of sweep point = 2001 (Number of sweep points must be ≥ 2 x span / RBW)
6. Sweep time = auto
7. Trace (RMS) averaging was performed over at least 100 traces.

7.6.4. Test Setup

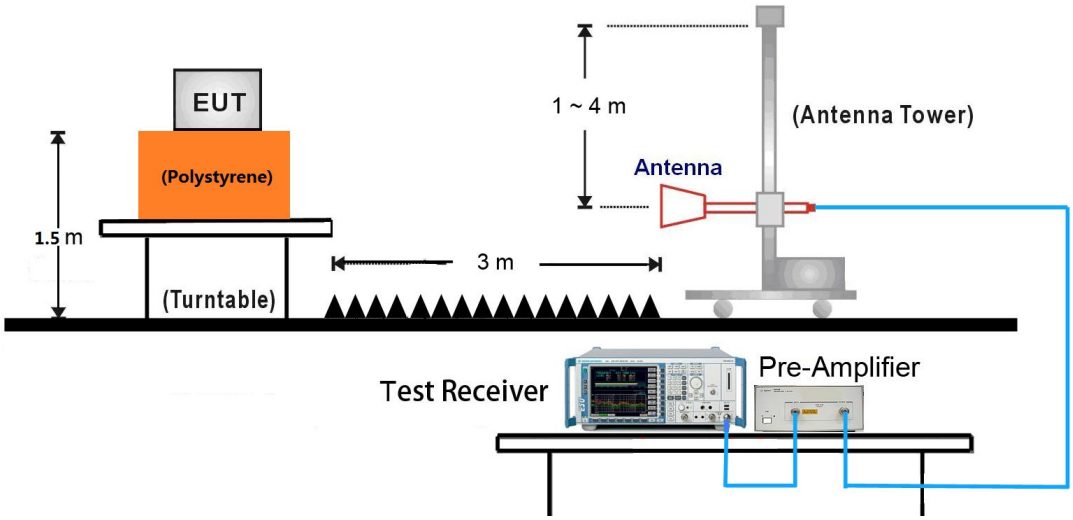
9kHz ~ 30MHz Test Setup:



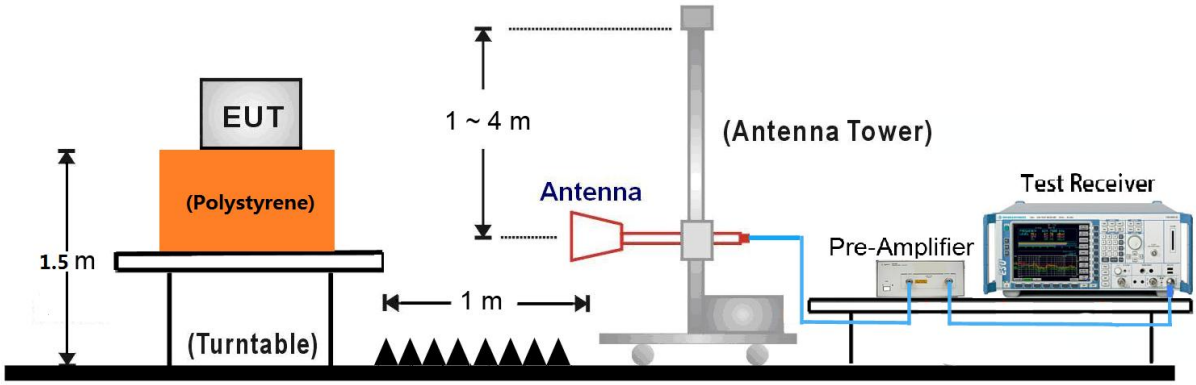
30MHz ~ 1GHz Test Setup:



1GHz ~ 18GHz Test Setup:



18GHz ~25GHz Test Setup:



7.6.5. Test Result

Test Mode:	BLE_1M	Test Date:	2023-02-19
Test Channel:	00	Test Engineer:	Amos Xia
Remark:	Average measurement was not performed if peak level lower than average limit. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Level (dBμV)	Factor (dB)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
*	3200.0000	51.63	3.81	78.37	26.74	Peak	Horizontal
	4000.0000	49.44	5.14	74.00	24.56	Peak	Horizontal
*	6705.0000	49.26	13.09	78.37	29.11	Peak	Horizontal
	8290.0000	53.09	15.49	74.00	20.91	Peak	Horizontal
*	3200.0000	46.10	3.81	78.37	32.27	Peak	Vertical
	4000.0000	44.55	5.14	74.00	29.45	Peak	Vertical
*	6375.0000	49.23	12.24	78.37	29.14	Peak	Vertical
	7365.0000	52.16	15.04	74.00	21.84	Peak	Vertical
Note 1: "*" is not in restricted band, its limit is 20dBc of the fundamental emission level (98.37dBμV/m) or 15.209 which is higher.							

Test Mode:	BLE_1M	Test Date:	2023-02-19
Test Channel:	19	Test Engineer:	Amos Xia
Remark:	Average measurement was not performed if peak level lower than average limit. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Level (dBμV)	Factor (dB)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
*	3250.0000	46.66	3.88	77.22	30.56	Peak	Horizontal
	4860.0000	44.38	7.13	74.00	29.62	Peak	Horizontal
*	6300.0000	48.04	11.89	77.22	29.18	Peak	Horizontal
	7425.0000	51.94	14.98	74.00	22.06	Peak	Horizontal
*	3250.0000	43.09	3.88	77.22	34.13	Peak	Vertical
	4850.0000	44.78	7.09	74.00	29.22	Peak	Vertical
*	5845.0000	48.67	10.30	77.22	28.55	Peak	Vertical
	7430.0000	51.88	15.00	74.00	22.12	Peak	Vertical

Note 1: "*" is not in restricted band, its limit is 20dBc of the fundamental emission level (97.22dBμV/m) or 15.209 which is higher.

Test Mode:	BLE_1M	Test Date:	2023-02-19
Test Channel:	39	Test Engineer:	Amos Xia
Remark:	Average measurement was not performed if peak level lower than average limit. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Level (dBμV)	Factor (dB)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
	4600.0000	44.97	6.87	74.00	29.03	Peak	Horizontal
*	6595.0000	48.70	12.81	76.19	27.49	Peak	Horizontal
*	7945.0000	51.36	15.59	76.19	24.83	Peak	Horizontal
	8325.0000	52.19	15.68	74.00	21.81	Peak	Horizontal
	4795.0000	43.83	7.10	74.00	30.17	Peak	Vertical
*	6755.0000	48.99	13.16	76.19	27.20	Peak	Vertical
*	7970.0000	52.34	15.50	76.19	23.85	Peak	Vertical
	8385.0000	51.97	15.22	74.00	22.03	Peak	Vertical

Note 1: "*" is not in restricted band, its limit is 20dBc of the fundamental emission level (96.19dBμV/m) or 15.209 which is higher.

Test Mode:	BLE_2M	Test Date:	2023-02-19
Test Channel:	00	Test Engineer:	Amos Xia
Remark:	Average measurement was not performed if peak level lower than average limit. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Level (dBμV)	Factor (dB)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
*	3200.0000	50.14	3.81	78.47	28.33	Peak	Horizontal
	4000.0000	47.92	5.14	74.00	30.55	Peak	Horizontal
*	6960.0000	49.91	14.03	78.47	28.56	Peak	Horizontal
	7390.0000	51.55	14.93	74.00	26.92	Peak	Horizontal
*	3200.0000	44.79	3.81	78.47	33.68	Peak	Vertical
	4795.0000	43.98	7.10	74.00	34.49	Peak	Vertical
*	6160.0000	47.97	11.40	78.47	30.50	Peak	Vertical
	7355.0000	51.28	15.09	74.00	27.19	Peak	Vertical

Note 1: “*” is not in restricted band, its limit is 20dBc of the fundamental emission level (98.47dBμV/m) or 15.209 which is higher.

Test Mode:	BLE_2M	Test Date:	2023-02-19
Test Channel:	19	Test Engineer:	Amos Xia
Remark:	Average measurement was not performed if peak level lower than average limit. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Level (dBμV)	Factor (dB)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
*	3250.0000	47.18	3.88	77.42	30.24	Peak	Horizontal
	4840.0000	44.14	7.09	74.00	33.28	Peak	Horizontal
*	6295.0000	48.12	11.86	77.42	29.30	Peak	Horizontal
	8320.0000	52.45	15.65	74.00	24.97	Peak	Horizontal
*	3250.0000	41.45	3.88	77.42	35.97	Peak	Vertical
	4795.0000	44.24	7.10	74.00	33.18	Peak	Vertical
*	6245.0000	48.58	11.52	77.42	28.84	Peak	Vertical
	7335.0000	51.20	15.00	74.00	26.22	Peak	Vertical

Note 1: "*" is not in restricted band, its limit is 20dBc of the fundamental emission level (97.42dBμV/m) or 15.209 which is higher.

Test Mode:	BLE_2M	Test Date:	2023-02-19
Test Channel:	39	Test Engineer:	Amos Xia
Remark:	Average measurement was not performed if peak level lower than average limit. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Level (dBμV)	Factor (dB)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
	4850.0000	43.98	7.09	74.00	30.02	Peak	Horizontal
*	6245.0000	48.58	11.52	76.51	27.93	Peak	Horizontal
*	7950.0000	51.86	15.67	76.51	24.65	Peak	Horizontal
	9065.0000	53.16	16.06	74.00	20.84	Peak	Horizontal
	4915.0000	44.02	7.31	74.00	29.98	Peak	Vertical
*	6250.0000	48.42	11.54	76.51	28.09	Peak	Vertical
*	7925.0000	51.53	15.31	76.51	24.98	Peak	Vertical
	8310.0000	52.31	15.58	74.00	21.69	Peak	Vertical

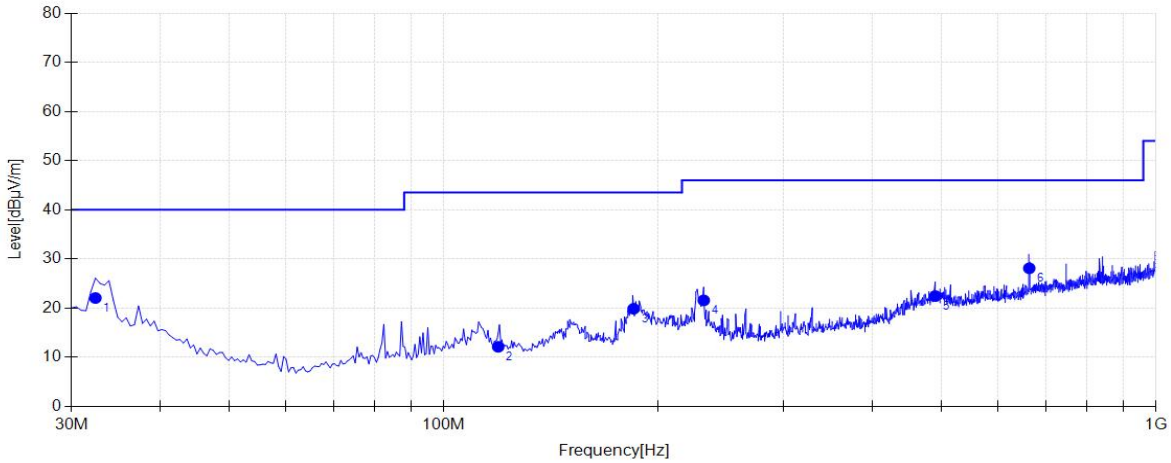
Note 1: "*" is not in restricted band, its limit is 20dBc of the fundamental emission level (96.51dBμV/m) or 15.209 which is higher.

The worst case of Radiated Emission below 1GHz:

30MHz – 1GHz Test Data

EUT:	Caper Cart M3 Android board	Polarity:	Horizontal
Model:	PCBA-CAP-CA03AN-RK39	SN:	N/A
Mode:	Transmit at BLE_1M Channel 00	Voltage:	DC 24V
Environment:	Temp: 22℃; Humi:54%	Engineer:	Amos Xia

Test Graph

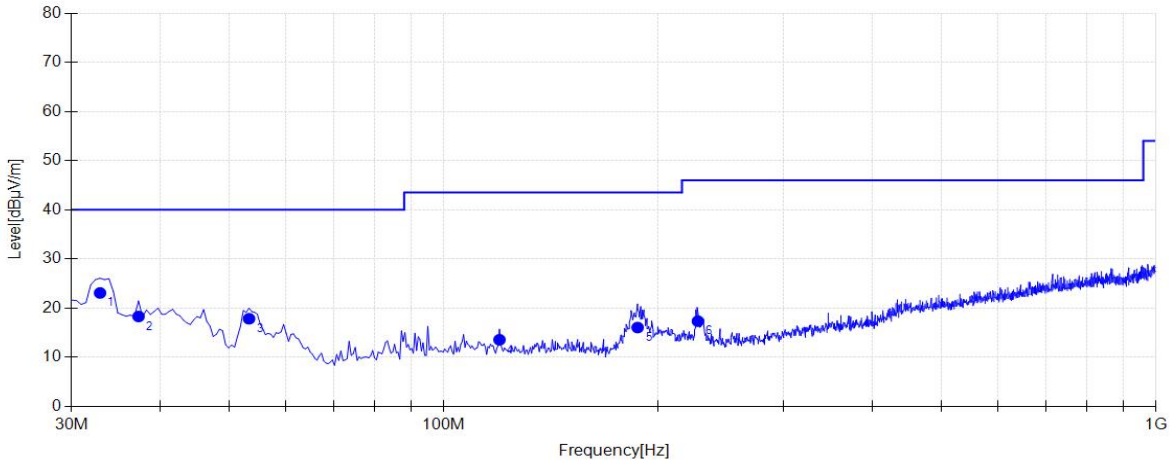


Final Data List								
NO.	Freq. [MHz]	Factor [dB]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity
1	32.4250	18.48	22.06	40.00	17.94	100	175	Horizontal
2	119.240	11.64	12.13	43.50	31.37	200	16	Horizontal
3	184.715	10.49	19.87	43.50	23.63	200	182	Horizontal
4	231.760	10.89	21.58	46.00	24.42	200	30	Horizontal
5	489.780	18.65	22.46	46.00	23.54	200	65	Horizontal
6	663.895	21.26	28.11	46.00	17.89	200	58	Horizontal

Note 1: The test trace is same as the ambient noise and the amplitude of the emissions are attenuated more than 20dB below the permissible (the test frequency range: 9kHz ~ 30MHz, 18GHz ~ 25GHz), therefore no data appear in the report.

EUT:	Caper Cart M3 Android board	Polarity:	Vertical
Model:	PCBA-CAP-CA03AN-RK39	SN:	N/A
Mode:	Transmit at BLE_1M Channel 00	Voltage:	DC 24V
Environment:	Temp: 22℃; Humi:54%	Engineer:	Amos Xia

Test Graph

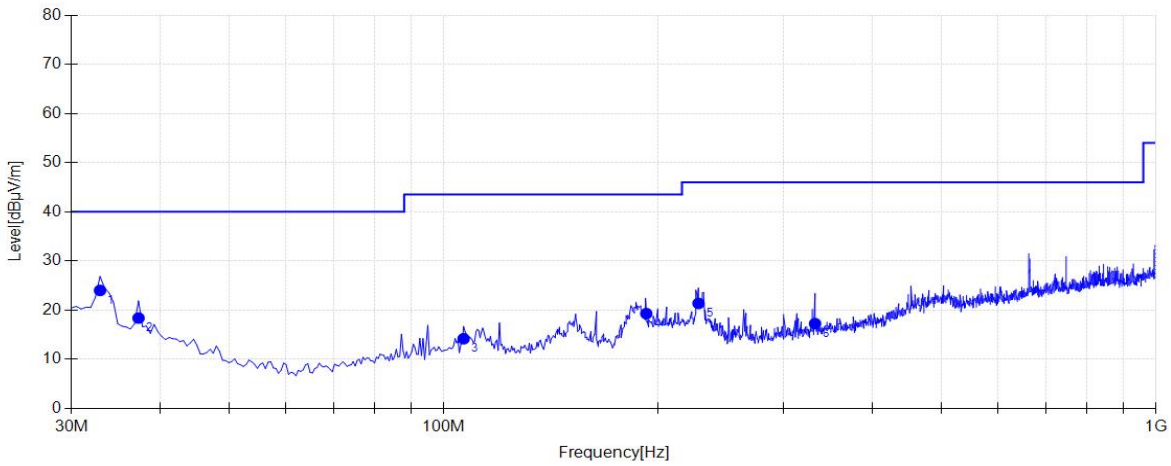


Final Data List								
NO.	Freq. [MHz]	Factor [dB]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity
1	32.9100	18.24	23.09	40.00	16.91	100	296	Vertical
2	37.2750	16.02	18.31	40.00	21.69	100	165	Vertical
3	53.2800	8.63	17.85	40.00	22.15	200	357	Vertical
4	119.725	11.64	13.57	43.50	29.93	200	165	Vertical
5	187.140	10.36	16.06	43.50	27.44	100	116	Vertical
6	227.395	10.72	17.35	46.00	28.65	100	137	Vertical

Note 1: The test trace is same as the ambient noise and the amplitude of the emissions are attenuated more than 20dB below the permissible (the test frequency range: 9kHz ~ 30MHz, 18GHz ~ 25GHz), therefore no data appear in the report.

EUT:	Caper Cart M3 Android board	Polarity:	Horizontal
Model:	PCBA-CAP-CA03AN-RK39	SN:	N/A
Mode:	Transmit at BLE_2M Channel 00	Voltage:	DC 24V
Environment:	Temp: 22℃; Humi:54%	Engineer:	Amos Xia

Test Graph

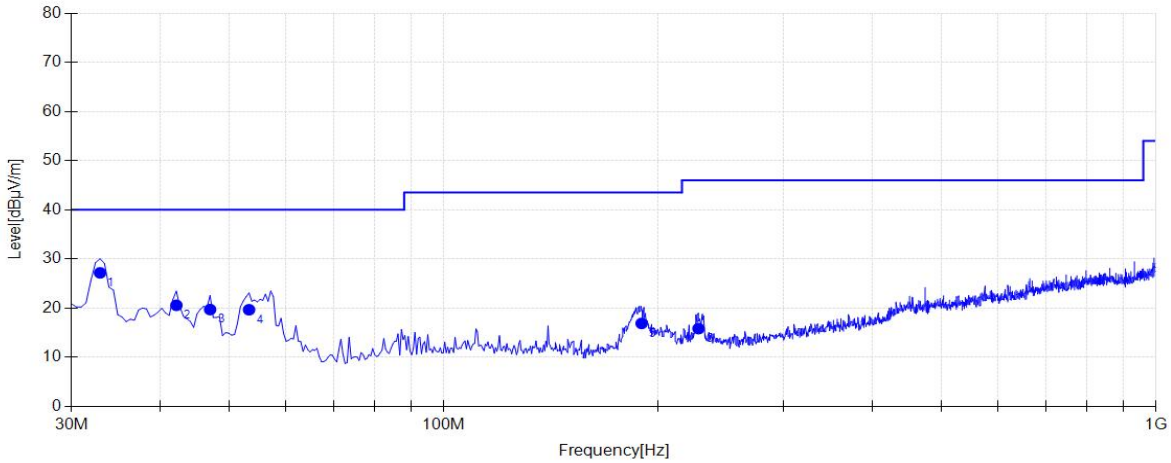


Final Data List								
NO.	Freq. [MHz]	Factor [dB]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity
1	32.9100	18.24	24.02	40.00	15.98	200	212	Horizontal
2	37.2750	16.02	18.39	40.00	21.61	200	37	Horizontal
3	106.630	11.39	14.19	43.50	29.31	200	10	Horizontal
4	192.475	10.09	19.29	43.50	24.21	200	178	Horizontal
5	227.880	10.74	21.37	46.00	24.63	200	192	Horizontal
6	332.155	14.50	17.26	46.00	28.74	200	185	Horizontal

Note 1: The test trace is same as the ambient noise and the amplitude of the emissions are attenuated more than 20dB below the permissible (the test frequency range: 9kHz ~ 30MHz, 18GHz ~ 25GHz), therefore no data appear in the report.

EUT:	Caper Cart M3 Android board	Polarity:	Vertical
Model:	PCBA-CAP-CA03AN-RK39	SN:	N/A
Mode:	Transmit at BLE_2M Channel 00	Voltage:	DC 24V
Environment:	Temp: 22℃; Humi:54%	Engineer:	Amos Xia

Test Graph



Final Data List								
NO.	Freq. [MHz]	Factor [dB]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity
1	32.9100	18.24	27.18	40.00	12.82	100	103	Vertical
2	42.1250	13.55	20.58	40.00	19.42	100	20	Vertical
3	46.9750	11.07	19.71	40.00	20.29	100	20	Vertical
4	53.2800	8.63	19.68	40.00	20.32	200	68	Vertical
5	189.565	10.23	16.89	43.50	26.61	100	130	Vertical
6	227.880	10.74	15.84	46.00	30.16	100	151	Vertical

Note 1: The test trace is same as the ambient noise and the amplitude of the emissions are attenuated more than 20dB below the permissible (the test frequency range: 9kHz ~ 30MHz, 18GHz ~ 25GHz), therefore no data appear in the report.

7.7. Radiated Restricted Band Edge Measurement

7.7.1. Test Limit

For 15.205 requirement:

Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a) of FCC part 15, must also comply with the radiated emission limits specified in Section 15.209(a).

Frequency (MHz)	Frequency (MHz)	Frequency (MHz)	Frequency (GHz)
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
[1] 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.25 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	([2])
13.36 - 13.41	--	--	--

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47CFR must not exceed the limits shown in Table per Section 15.209.

FCC Part 15 Subpart C Paragraph 15.209		
Frequency [MHz]	Field Strength [uV/m]	Measured Distance [Meters]
0.009 - 0.490	2400/F (kHz)	300
0.490 - 1.705	24000/F (kHz)	30
1.705 - 30	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

For RSS-Gen Section 8.10 requirement:

Radiated emissions which fall in the restricted bands, as defined in Section 8.10 of RSS-Gen, must also comply with the radiated emission limits specified in Section 8.9.

Frequency (MHz)	Frequency (MHz)	Frequency (GHz)
0.009 - 0.110	240 - 285	9.0 - 9.2
2.1735 - 2.1905	322 - 335.4	9.3 - 9.5
3.020 - 3.026	399.9 - 410	10.6 - 12.7
4.125 - 4.128	608 - 614	13.25 - 13.4
4.17725 - 4.17775	960 - 1427	14.47 - 14.5
4.20725 - 4.20775	1435 - 1626.5	15.35 - 16.2
5.677 - 5.683	1645.5 - 1646.5	17.7 - 21.4
6.215 - 6.218	1660 - 1710	22.01 - 23.12
6.26775 - 6.26825	1718.8 -1722.2	23.6 - 24.0
6.31175 - 6.31225	2200 - 2300	31.2 - 31.8
8.291 - 8.294	2310 -2390	36.43 - 36.5
8.362 - 8.366	2655 - 2900	Above 38.6
8.37625 - 8.38675	3260 - 3267	--
8.41425 - 8.41475	3332 -3339	
12.29 - 12.293	334.5 - 3358	
12.51975 - 12.52025	3500 - 4400	
12.57675 - 12.57725	4500 - 5150	
13.36 -13.41	5350 - 5460	
16.42 - 16.423	7250 - 7750	
16.69475 - 16.69525	8025 - 8500	
16.80425 - 16.80475	--	
25.5 - 25.67		
37.5 - 38.25		
73 - 74.6		
74.8 - 75.2		
108 - 138		
156.52475 - 156.525225		
156.7 - 156.9		

All out of band emissions appearing in a restricted band as specified in Section 8.10 of the RSS-Gen

must not exceed the limits shown in Table per Section 8.9.

RSS-Gen Section 8.9		
Frequency [MHz]	Field Strength [uV/m]	Measured Distance [Meters]
0.009 - 0.490	2400/F (kHz)	300
0.490 - 1.705	24000/F (kHz)	30
1.705 - 30	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

7.7.2. Test Procedure Used

ANSI C63.10 Section 6.3 (General Requirements)

ANSI C63.10 Section 6.6 (Standard test method above 1GHz)

7.7.3. Test Setting

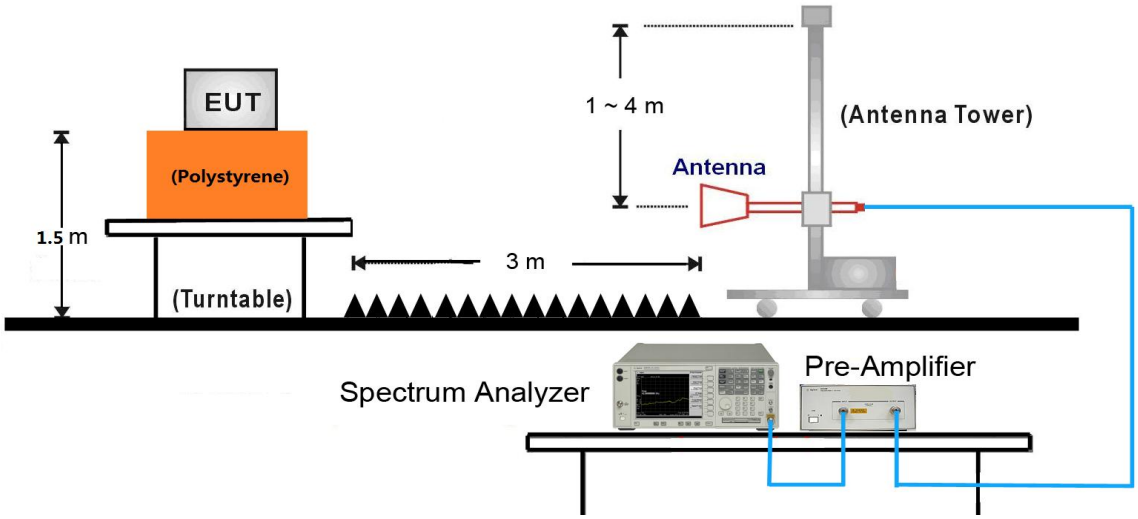
Peak Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

Average Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = Power Average (RMS)
5. Number of sweep point = 2001 (Number of sweep points must be ≥ 2 x span / RBW)
6. Sweep time = auto
7. Trace (RMS) averaging was performed over at least 100 traces.

7.7.4. Test Setup



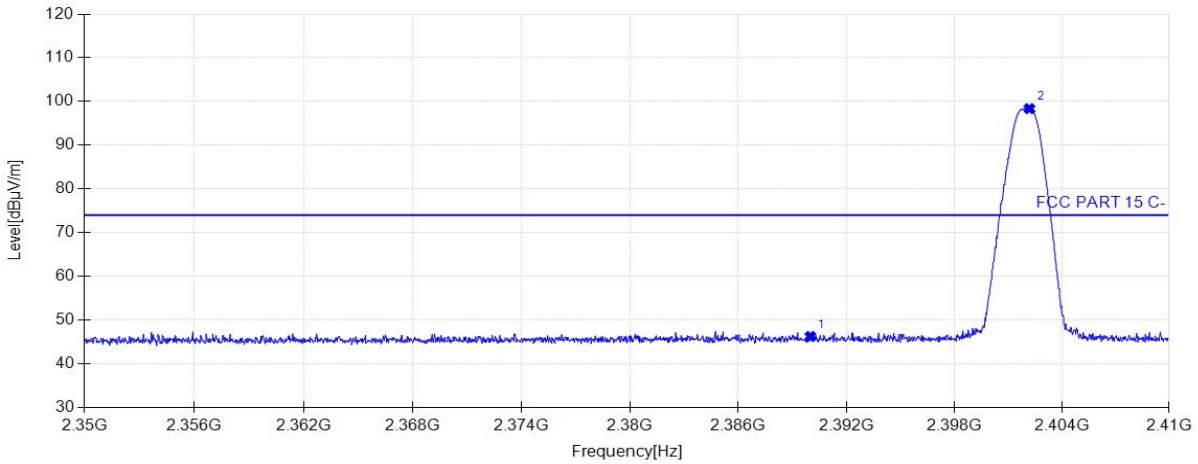
Note: This item was performed with the WIFI antenna connected.

7.7.5. Test Result

Project Information			
EUT:	Caper Cart M3 Android	Model:	PCBA-CAP-CA03AN-RK
SN:	N/A	Voltage:	DC 24V
Environment:	Temp: 22℃; Humi:54%	Engineer:	Amos Xia
Remark:	Transmit at BLE_1M Channel 00		

Start of Test:2023-02-19 18:30:53

Test Graph

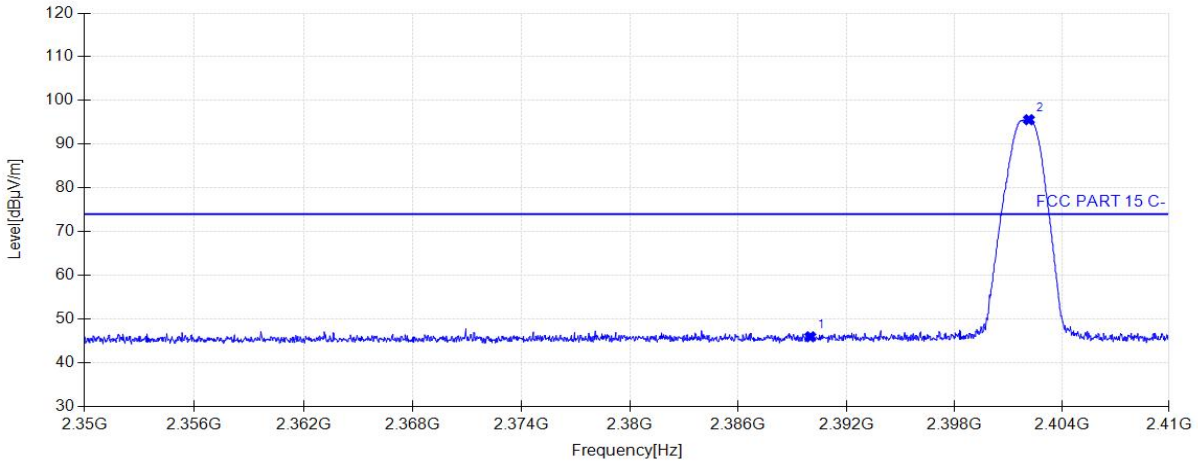


Suspected Data List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2390.00	46.24	32.74	74.00	27.76	160	144	Horizontal
2	2402.20	98.37	32.81	74.00	-24.37	160	88	Horizontal

Project Information			
EUT:	Caper Cart M3 Android	Model:	PCBA-CAP-CA03AN-RK
SN:	N/A	Voltage:	DC 24V
Environment:	Temp: 22℃; Humi:54%	Engineer:	Amos Xia
Remark:	Transmit at BLE_1M Channel 00		

Start of Test:2023-02-19 18:31:45

Test Graph

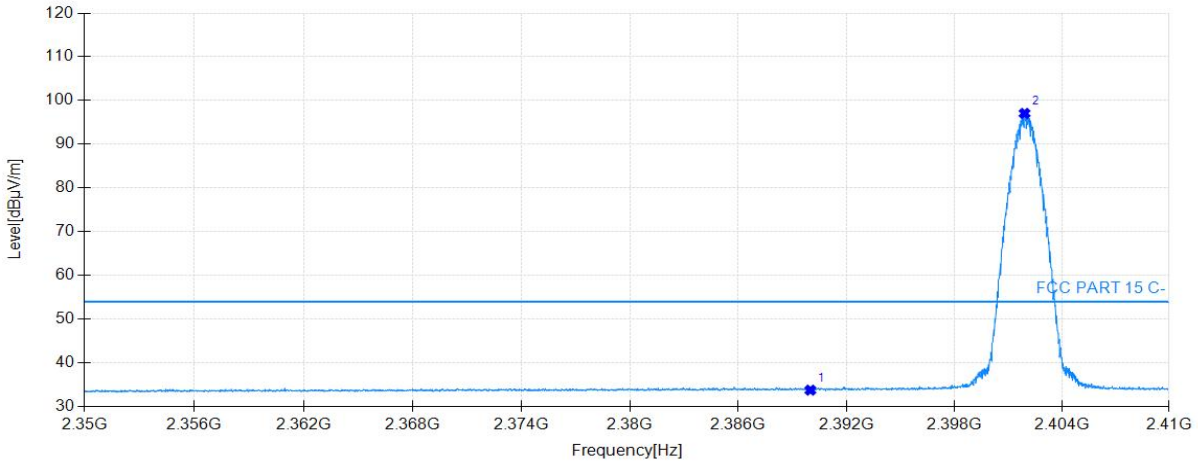


Suspected Data List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2390.00	45.95	32.74	74.00	28.05	160	223	Vertical
2	2402.17	95.61	32.81	74.00	-21.61	160	245	Vertical

Project Information			
EUT:	Caper Cart M3 Android	Model:	PCBA-CAP-CA03AN-RK
SN:	N/A	Voltage:	DC 24V
Environment:	Temp: 22℃; Humi:54%	Engineer:	Amos Xia
Remark:	Transmit at BLE_1M Channel 00		

Start of Test:2023-02-19 18:33:19

Test Graph

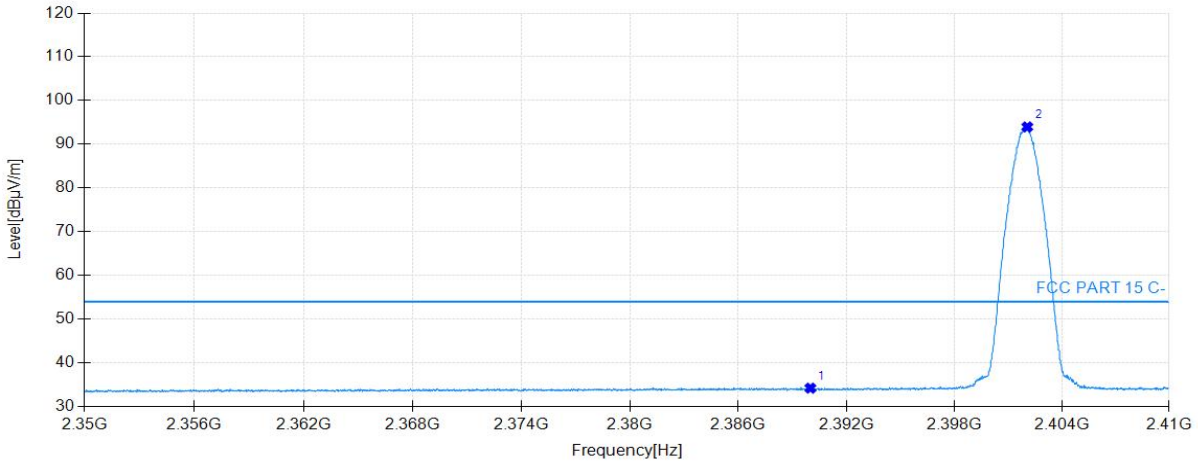


Suspected Data List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2390.00	33.73	32.74	54.00	20.27	160	350	Horizontal
2	2401.93	97.05	32.80	54.00	-43.05	160	88	Horizontal

Project Information			
EUT:	Caper Cart M3 Android	Model:	PCBA-CAP-CA03AN-RK
SN:	N/A	Voltage:	DC 24V
Environment:	Temp: 22℃; Humi:54%	Engineer:	Amos Xia
Remark:	Transmit at BLE_1M Channel 00		

Start of Test:2023-02-19 18:34:12

Test Graph

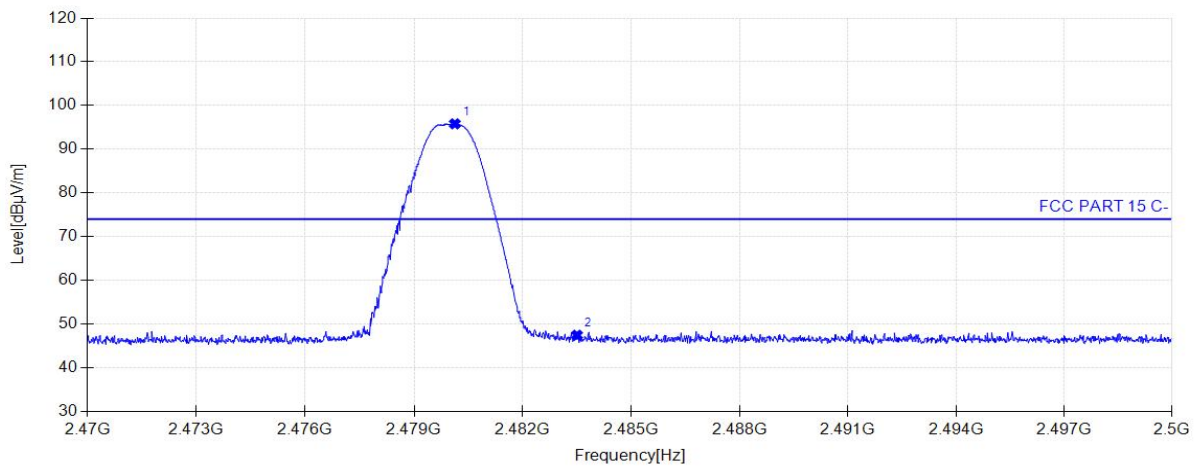


Suspected Data List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2390.00	34.19	32.74	54.00	19.81	160	182	Vertical
2	2402.08	93.96	32.80	54.00	-39.96	160	243	Vertical

Project Information			
EUT:	Caper Cart M3 Android	Model:	PCBA-CAP-CA03AN-RK
SN:	N/A	Voltage:	DC 24V
Environment:	Temp: 22℃; Humi:54%	Engineer:	Amos Xia
Remark:	Transmit at BLE_1M Channel 39		

Start of Test:2023-02-19 18:36:22

Test Graph

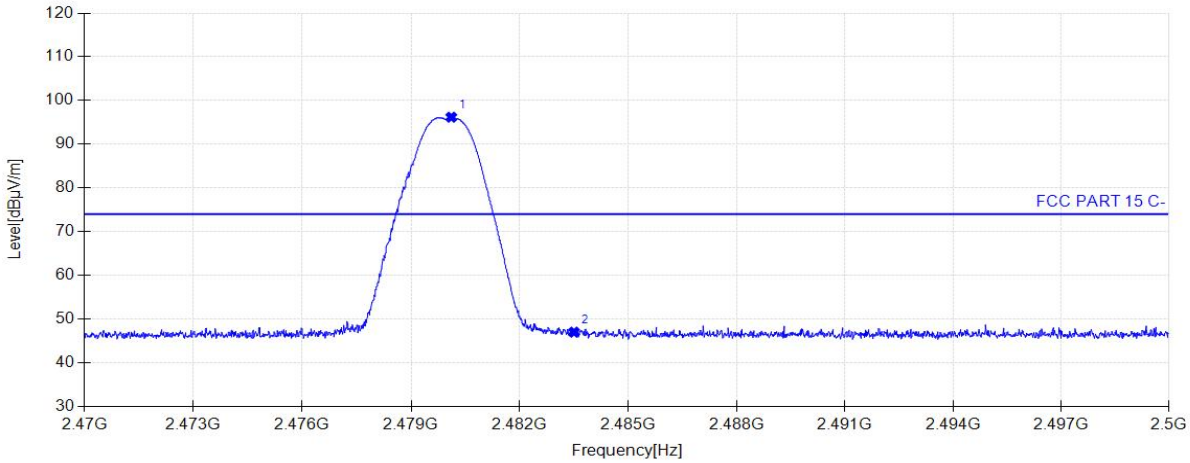


Suspected Data List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2480.12	95.81	33.22	74.00	-21.81	160	83	Horizontal
2	2483.50	47.45	33.23	74.00	26.55	160	337	Horizontal

Project Information			
EUT:	Caper Cart M3 Android	Model:	PCBA-CAP-CA03AN-RK
SN:	N/A	Voltage:	DC 24V
Environment:	Temp: 22℃; Humi:54%	Engineer:	Amos Xia
Remark:	Transmit at BLE_1M Channel 39		

Start of Test:2023-02-19 18:37:14

Test Graph

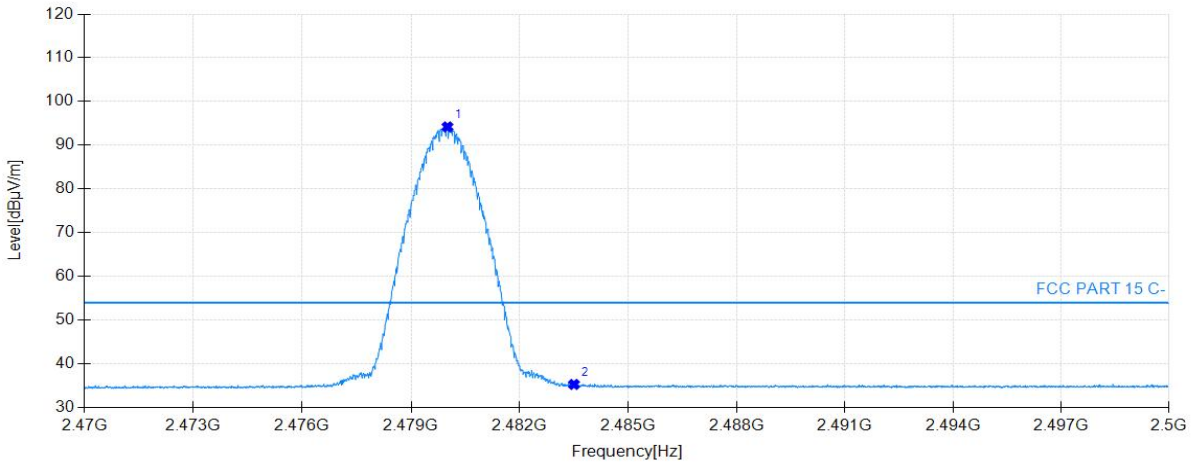


Suspected Data List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2480.11	96.19	33.22	74.00	-22.19	160	50	Vertical
2	2483.50	47.00	33.23	74.00	27.00	160	276	Vertical

Project Information			
EUT:	Caper Cart M3 Android	Model:	PCBA-CAP-CA03AN-RK
SN:	N/A	Voltage:	DC 24V
Environment:	Temp: 22℃; Humi:54%	Engineer:	Amos Xia
Remark:	Transmit at BLE_1M Channel 39		

Start of Test:2023-02-19 18:38:35

Test Graph

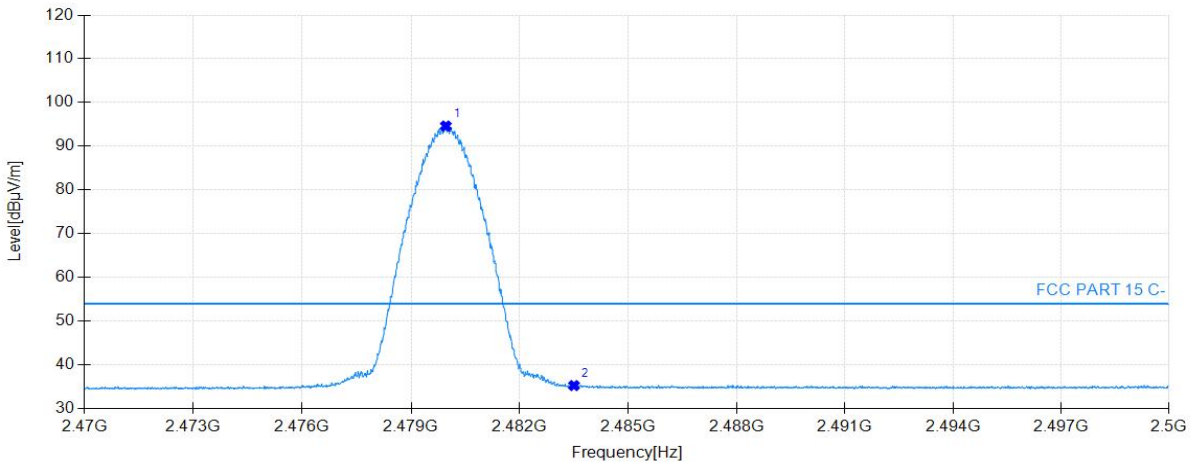


Suspected Data List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2480.00	94.20	33.21	54.00	-40.20	160	82	Horizontal
2	2483.50	35.27	33.23	54.00	18.73	160	89	Horizontal

Project Information			
EUT:	Caper Cart M3 Android	Model:	PCBA-CAP-CA03AN-RK
SN:	N/A	Voltage:	DC 24V
Environment:	Temp: 22℃; Humi:54%	Engineer:	Amos Xia
Remark:	Transmit at BLE_1M Channel 39		

Start of Test:2023-02-19 18:39:28

Test Graph

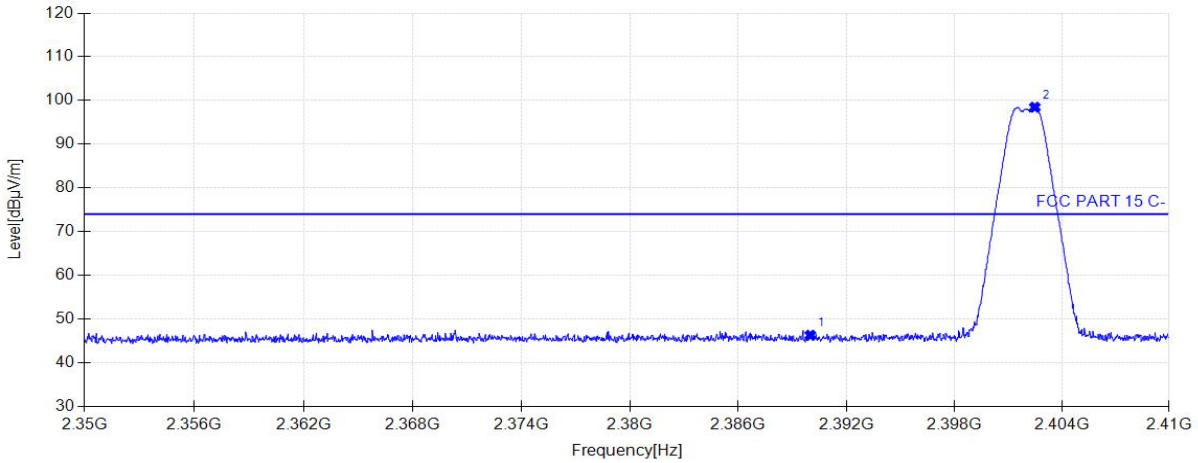


Suspected Data List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2479.96	94.63	33.21	54.00	-40.63	160	50	Vertical
2	2483.50	35.24	33.23	54.00	18.76	160	167	Vertical

Project Information			
EUT:	Caper Cart M3 Android	Model:	PCBA-CAP-CA03AN-RK
SN:	N/A	Voltage:	DC 24V
Environment:	Temp: 22℃; Humi:54%	Engineer:	Amos Xia
Remark:	Transmit at BLE_2M Channel 00		

Start of Test:2023-02-19 18:41:44

Test Graph

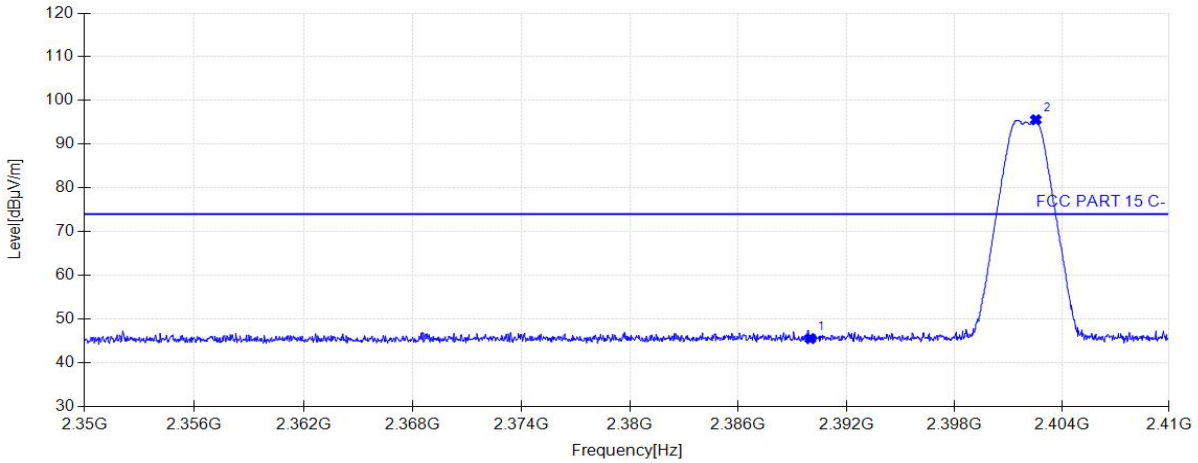


Suspected Data List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2390.00	46.29	32.74	74.00	27.71	160	0	Horizontal
2	2402.50	98.47	32.81	74.00	-24.47	160	82	Horizontal

Project Information			
EUT:	Caper Cart M3 Android	Model:	PCBA-CAP-CA03AN-RK
SN:	N/A	Voltage:	DC 24V
Environment:	Temp: 22℃; Humi:54%	Engineer:	Amos Xia
Remark:	Transmit at BLE_2M Channel 00		

Start of Test:2023-02-19 18:42:36

Test Graph

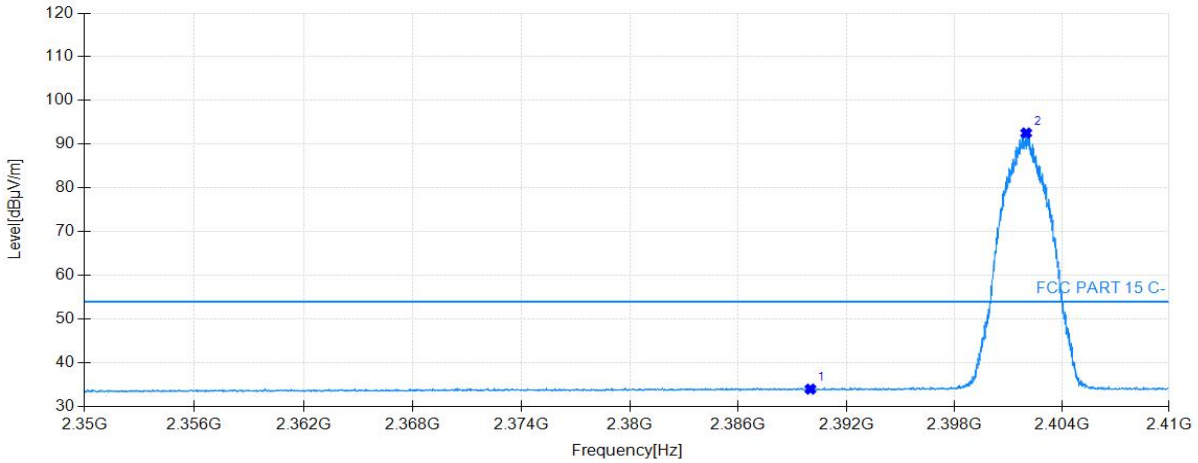


Suspected Data List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2390.00	45.53	32.74	74.00	28.47	160	345	Vertical
2	2402.56	95.60	32.81	74.00	-21.60	160	126	Vertical

Project Information			
EUT:	Caper Cart M3 Android	Model:	PCBA-CAP-CA03AN-RK
SN:	N/A	Voltage:	DC 24V
Environment:	Temp: 22℃; Humi:54%	Engineer:	Amos Xia
Remark:	Transmit at BLE_2M Channel 00		

Start of Test:2023-02-19 18:44:55

Test Graph

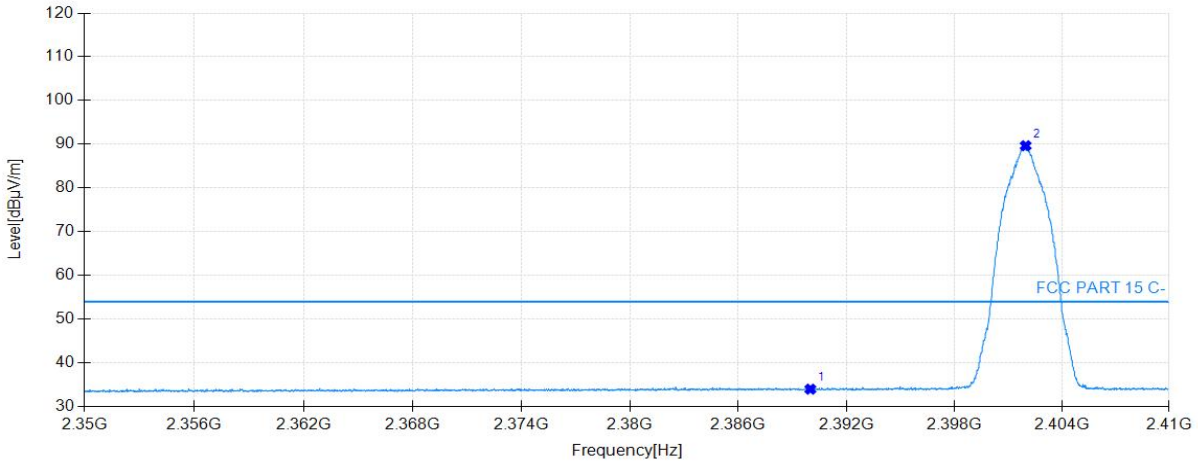


Suspected Data List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2390.00	33.97	32.74	54.00	20.03	160	172	Horizontal
2	2402.02	92.57	32.80	54.00	-38.57	160	88	Horizontal

Project Information			
EUT:	Caper Cart M3 Android	Model:	PCBA-CAP-CA03AN-RK
SN:	N/A	Voltage:	DC 24V
Environment:	Temp: 22℃; Humi:54%	Engineer:	Amos Xia
Remark:	Transmit at BLE_2M Channel 00		

Start of Test:2023-02-19 18:45:48

Test Graph

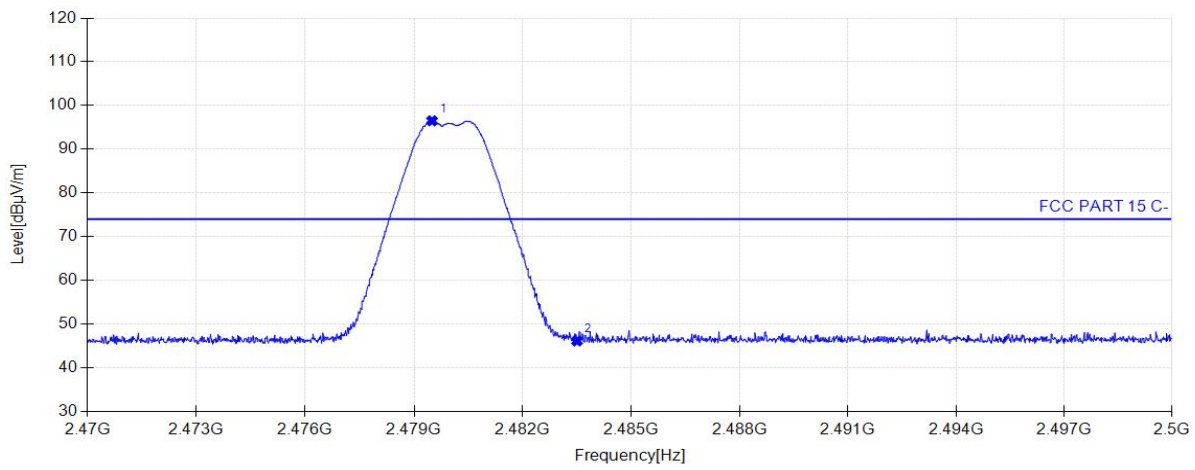


Suspected Data List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2390.00	33.96	32.74	54.00	20.04	160	344	Vertical
2	2401.99	89.65	32.80	54.00	-35.65	160	242	Vertical

Project Information			
EUT:	Caper Cart M3 Android	Model:	PCBA-CAP-CA03AN-RK
SN:	N/A	Voltage:	DC 24V
Environment:	Temp: 22℃; Humi:54%	Engineer:	Amos Xia
Remark:	Transmit at BLE_2M Channel 39		

Start of Test:2023-02-19 18:48:15

Test Graph

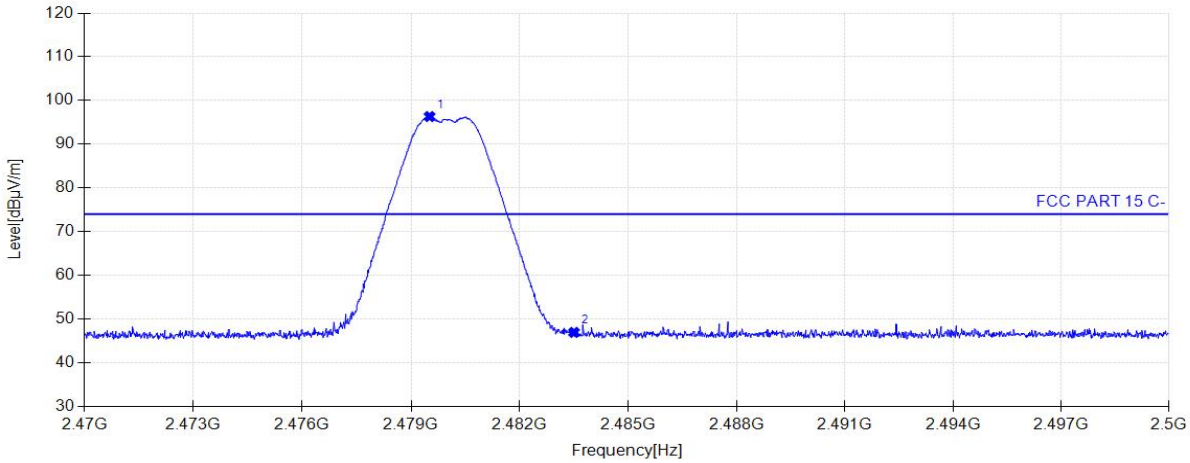


Suspected Data List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2479.49	96.51	33.21	74.00	-22.51	160	87	Horizontal
2	2483.50	46.14	33.23	74.00	27.86	160	87	Horizontal

Project Information			
EUT:	Caper Cart M3 Android	Model:	PCBA-CAP-CA03AN-RK
SN:	N/A	Voltage:	DC 24V
Environment:	Temp: 22℃; Humi:54%	Engineer:	Amos Xia
Remark:	Transmit at BLE_2M Channel 39		

Start of Test:2023-02-19 18:49:08

Test Graph

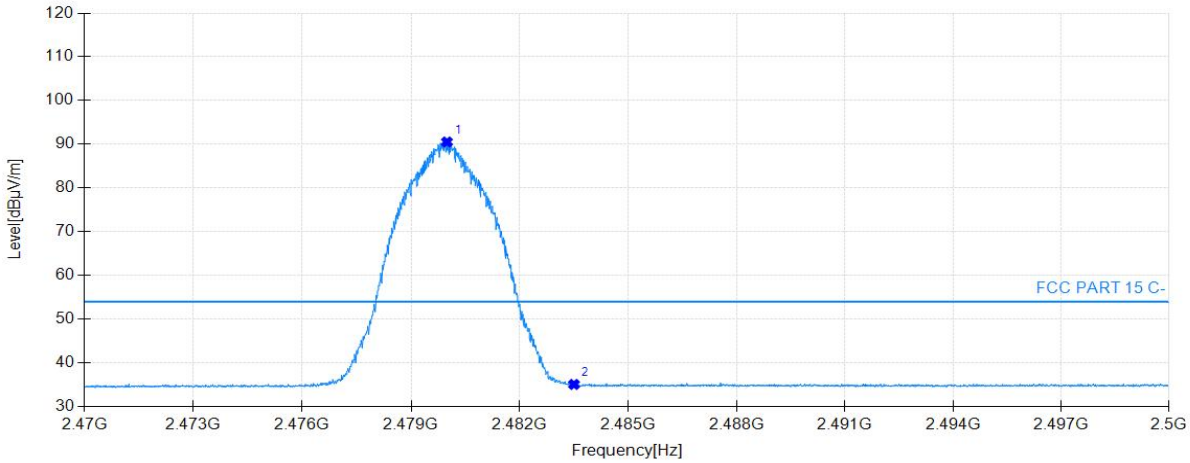


Suspected Data List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2479.51	96.33	33.21	74.00	-22.33	160	50	Vertical
2	2483.50	46.95	33.23	74.00	27.05	160	285	Vertical

Project Information			
EUT:	Caper Cart M3 Android	Model:	PCBA-CAP-CA03AN-RK
SN:	N/A	Voltage:	DC 24V
Environment:	Temp: 22℃; Humi:54%	Engineer:	Amos Xia
Remark:	Transmit at BLE_2M Channel 39		

Start of Test:2023-02-19 18:50:33

Test Graph

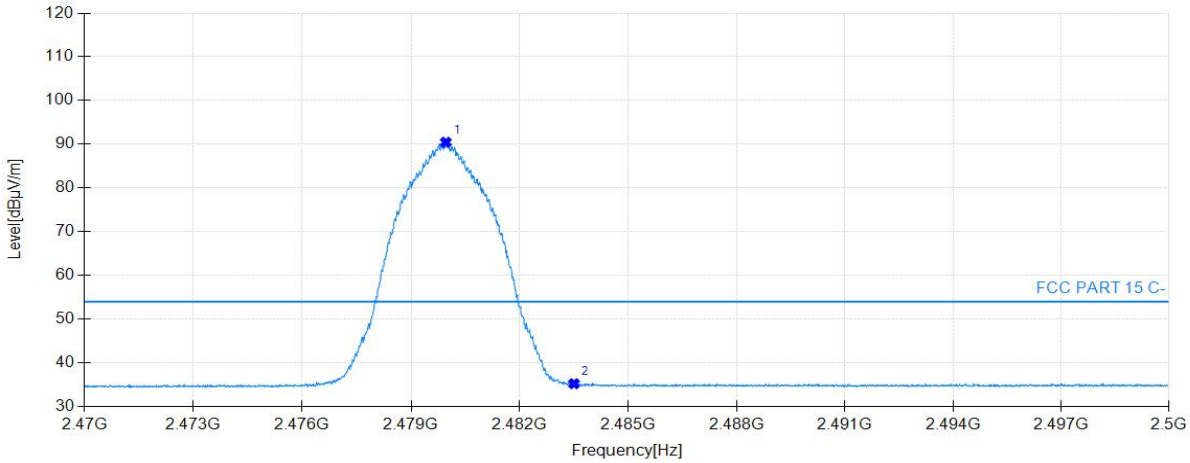


Suspected Data List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2479.99	90.52	33.21	54.00	-36.52	160	82	Horizontal
2	2483.50	35.04	33.23	54.00	18.96	160	235	Horizontal

Project Information			
EUT:	Caper Cart M3 Android	Model:	PCBA-CAP-CA03AN-RK
SN:	N/A	Voltage:	DC 24V
Environment:	Temp: 22℃; Humi:54%	Engineer:	Amos Xia
Remark:	Transmit at BLE_2M Channel 39		

Start of Test:2023-02-19 18:51:26

Test Graph



Suspected Data List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2479.96	90.45	33.21	54.00	-36.45	160	51	Vertical
2	2483.50	35.20	33.23	54.00	18.80	160	210	Vertical

7.8. AC Conducted Emissions Measurement

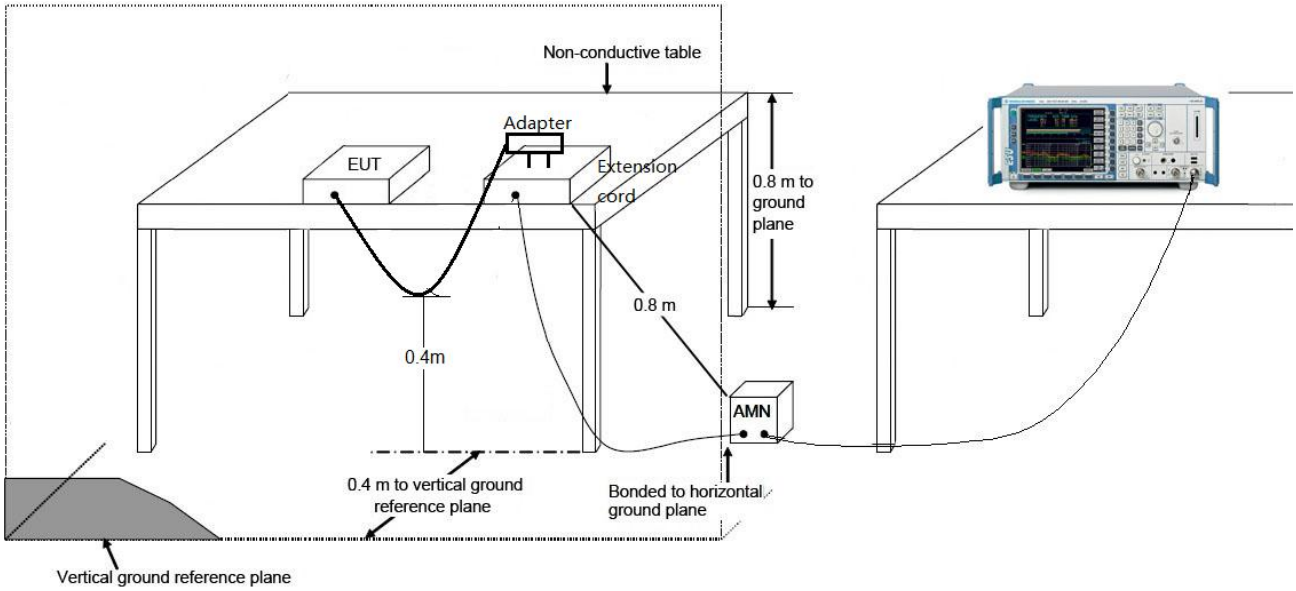
7.8.1. Test Limit

FCC Part 15 Subpart C Paragraph 15.207 Limits		
Frequency (MHz)	QP (dBuV)	AV (dBuV)
0.15 - 0.50	66 - 56	56 – 46
0.50 - 5.0	56	46
5.0 - 30	60	50

Note 1: The lower limit shall apply at the transition frequencies.

Note 2: The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.5MHz.

7.8.2. Test Setup



7.8.3. Test Result

DC power supply, Not applicable.

8. CONCLUSION

The data collected relate only the item(s) tested and show that the **Caper Cart M3 Android board** is in compliance with Part 15C of the FCC Rules.

The End