

Appendix A: Test Results of Bluetooth LE

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Appendix A.1: Test Results of 6dB Bandwidth

Test Result

TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.700	2401.624	2402.324	0.5	PASS
		2440	0.664	2439.652	2440.316	0.5	PASS
		2480	0.696	2479.628	2480.324	0.5	PASS

Test Graphs





Appendix A.2: Test Results of 99% Bandwidth

Test Result

TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0716	2401.4513	2402.5229	---	PASS
		2440	1.0729	2439.4517	2440.5246	---	PASS
		2480	1.0765	2479.4454	2480.5219	---	PASS

Test Graphs



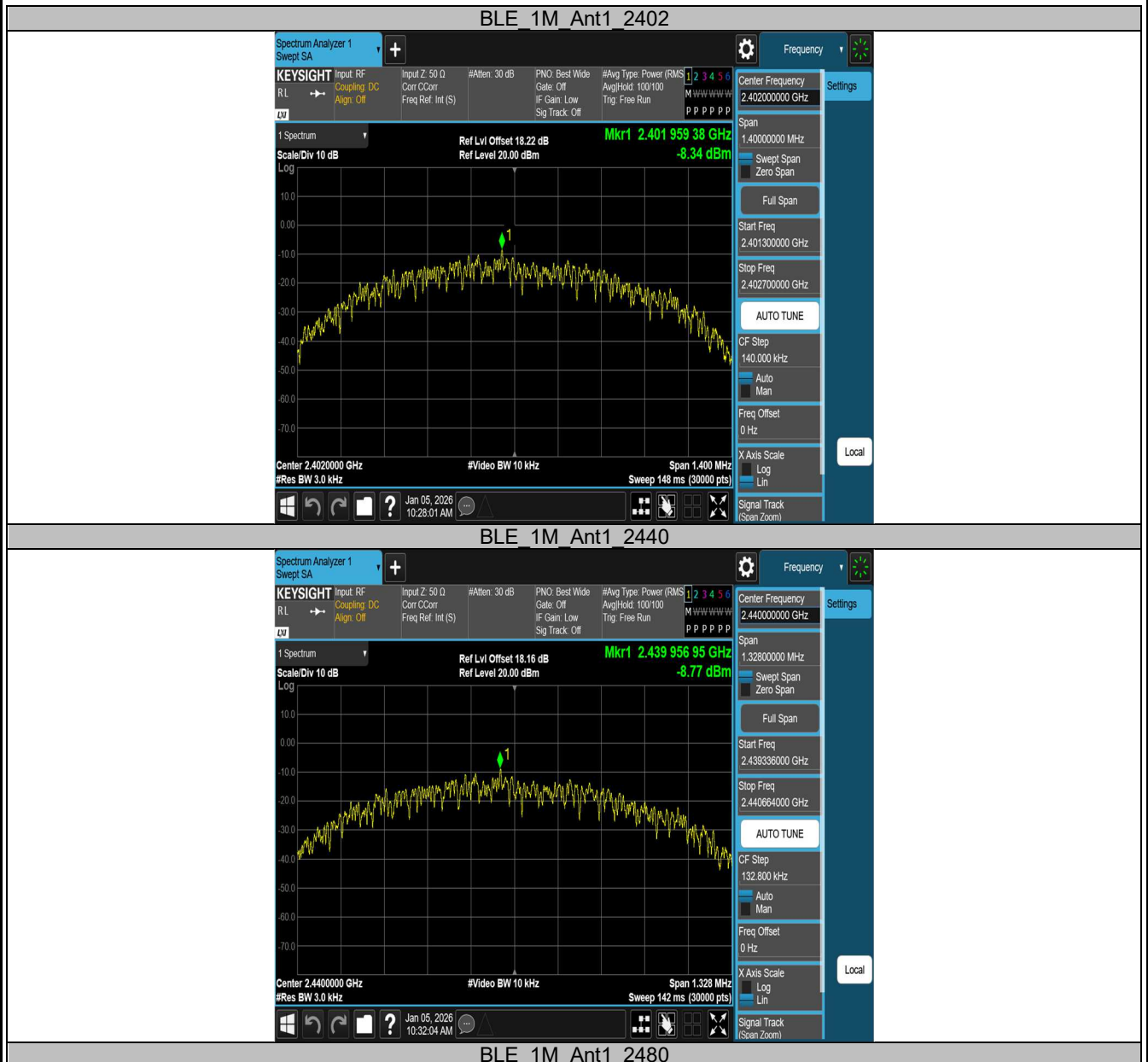


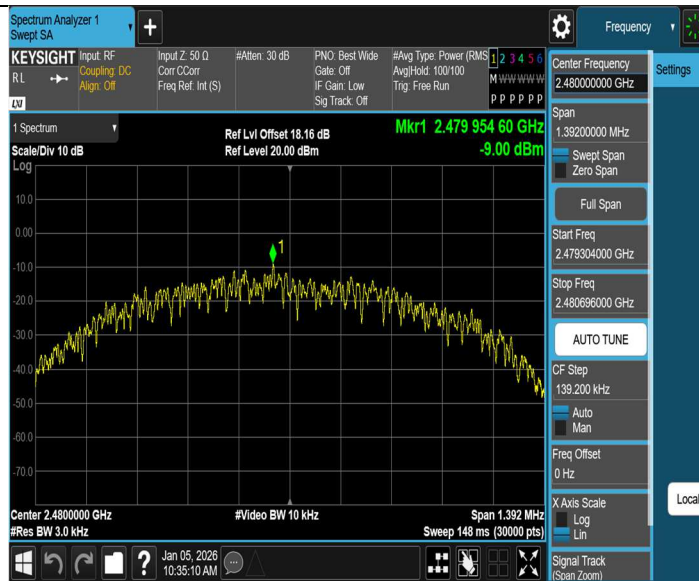
Appendix A.3: Test Results of Conducted Power Spectral Density

Test Result

TestMode	Antenna	Channel	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-8.34	≤8.00	PASS
		2440	-8.77	≤8.00	PASS
		2480	-9.00	≤8.00	PASS

Test Graphs





Appendix A.4: Test Results of Band Edge Measurements

Test Result

TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	4.66	-41.73	≤-15.34	PASS
		High	2480	4.00	-43.81	≤-16.00	PASS

Test Graphs

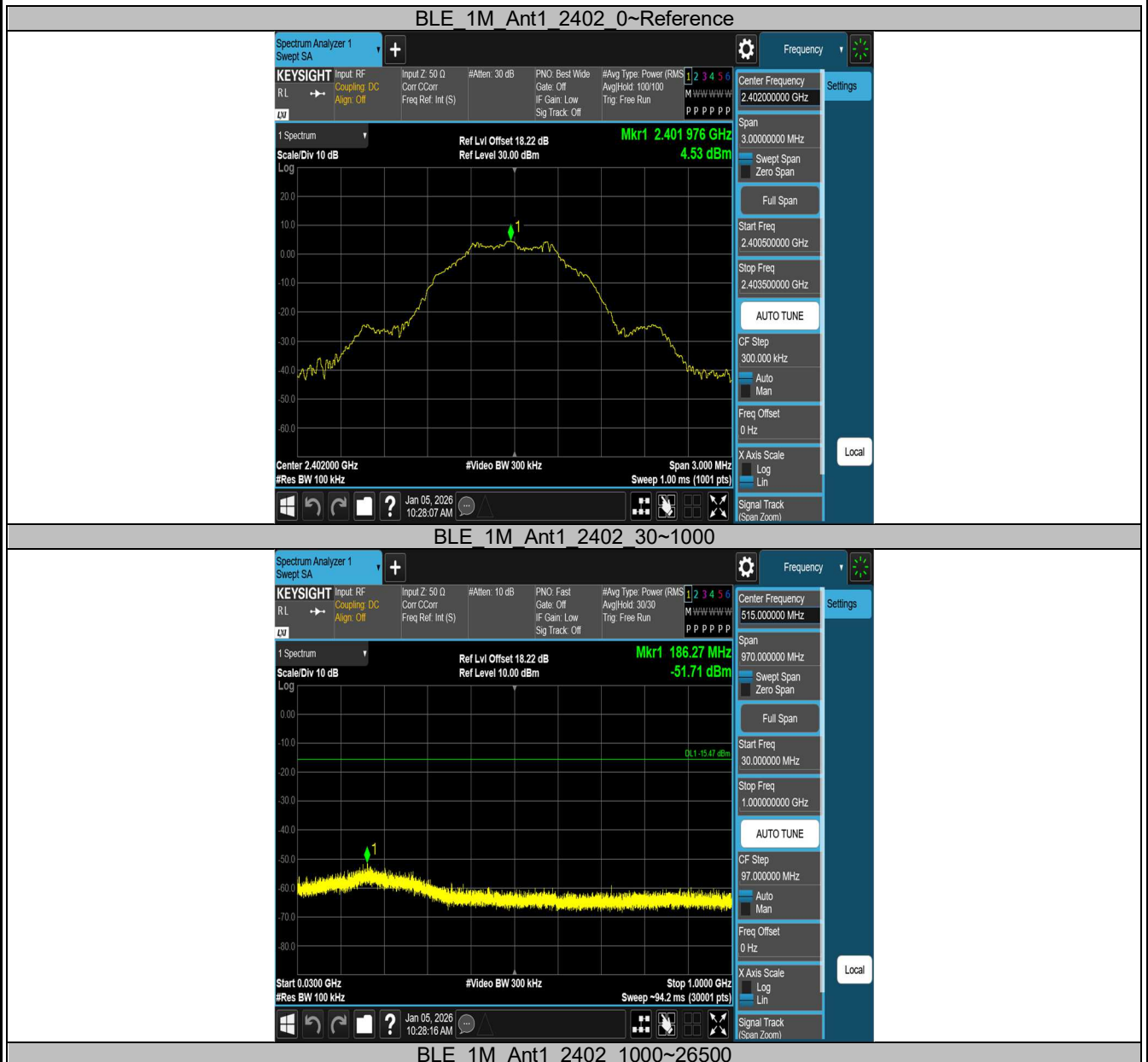


Appendix A.5: Test Results of Conducted Spurious Emission

Test Result

TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	4.53	4.53	---	PASS
			30~1000	4.53	-51.71	≤-15.47	PASS
			1000~26500	4.53	-54.17	≤-15.47	PASS
		2440	Reference	3.91	3.91	---	PASS
			30~1000	3.91	-52.51	≤-16.09	PASS
			1000~26500	3.91	-54.11	≤-16.09	PASS
		2480	Reference	4.12	4.12	---	PASS
			30~1000	4.12	-52.14	≤-15.88	PASS
			1000~26500	4.12	-54.54	≤-15.88	PASS

Test Graphs

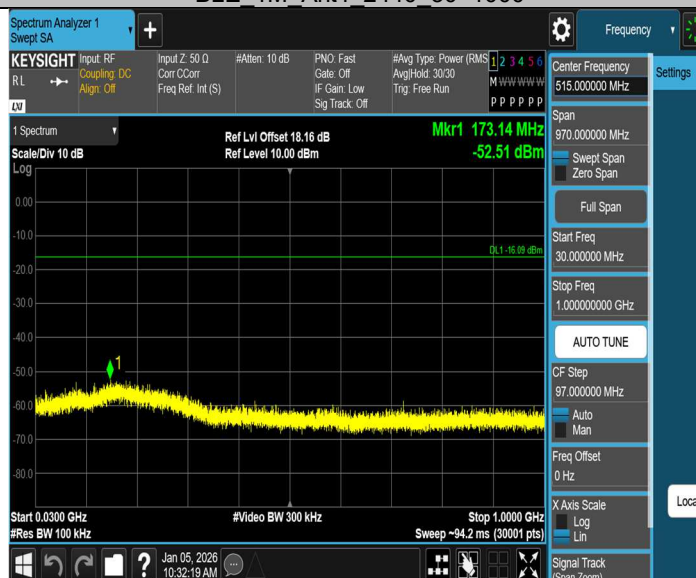




BLE_1M_Ant1_2440_0~Reference



BLE_1M_Ant1_2440_30~1000



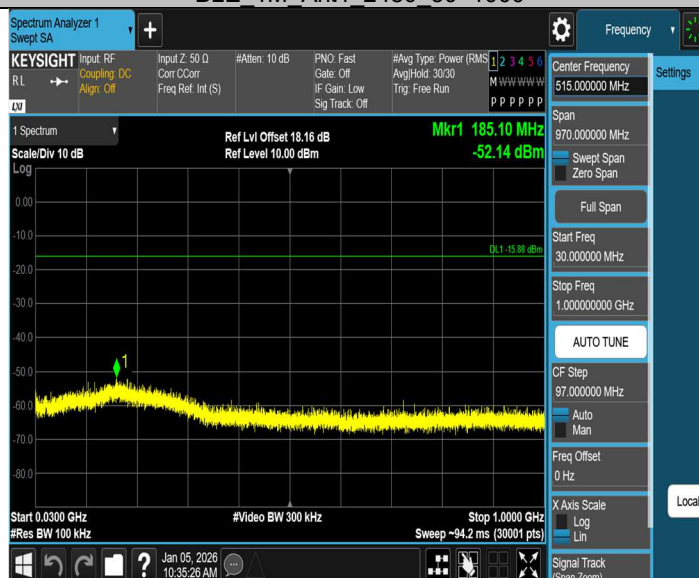
BLE_1M_Ant1_2440_1000~26500



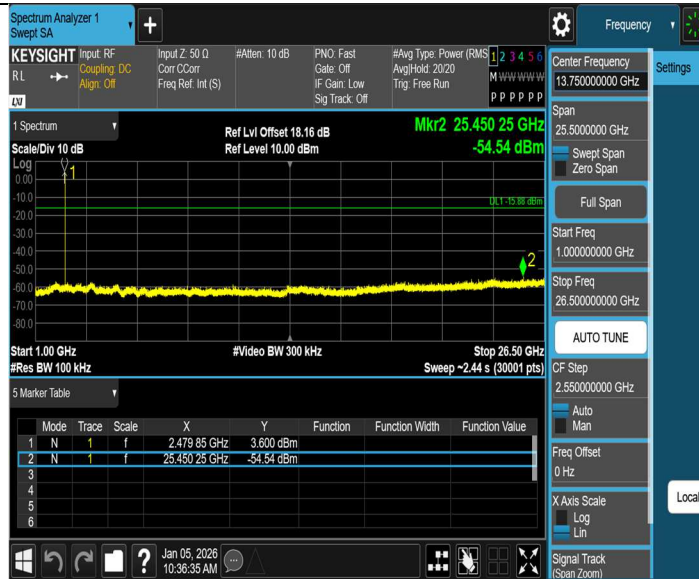
BLE_1M_Ant1_2480_0~Reference



BLE_1M_Ant1_2480_30~1000



BLE_1M_Ant1_2480_1000~26500



Appendix A.6: Test Results of Radiated Spurious Emissions

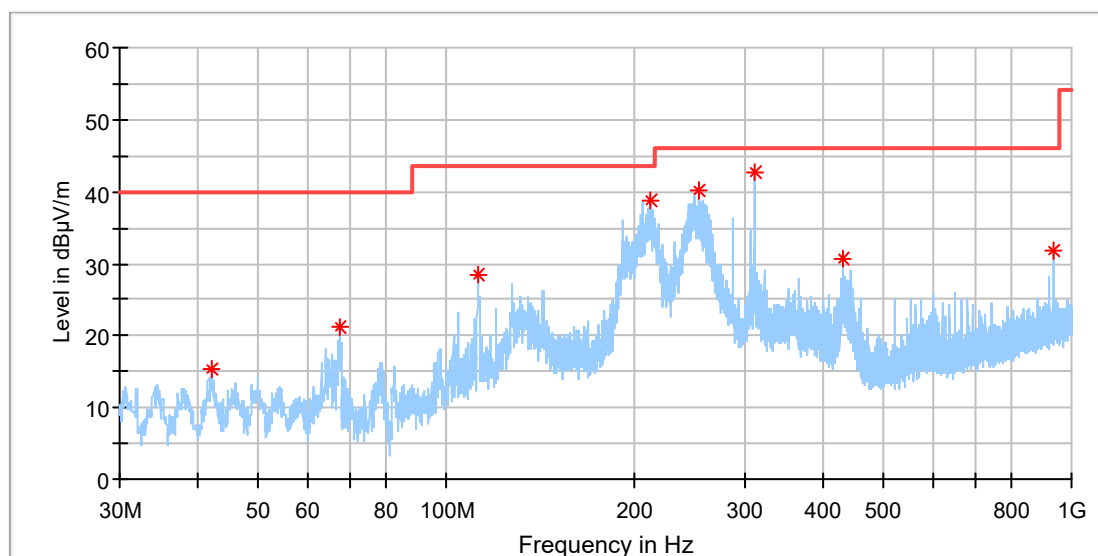
Note:

- 1) This testing was carried out on different modulations, but only the worst case was presented in this report.
- 2) Testing was carried out within frequency range 9kHz to the tenth harmonics. The measurement results below 30MHz and 18GHz - 26.5GHz were greater than 20dB below the limit, so only the radiated spurious emissions from 30MHz to 18GHz were reported.

30 MHz - 1GHz

EUT Information

EUT Name:	Robotic Lawn Mower
Model:	Raccoon 2 SE
Test Mode:	BLE 1M_Mid channel
Order No/Sample No:	168498100/A004142502-001
Test Voltage:	Battery
Remark:	Temp 22 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

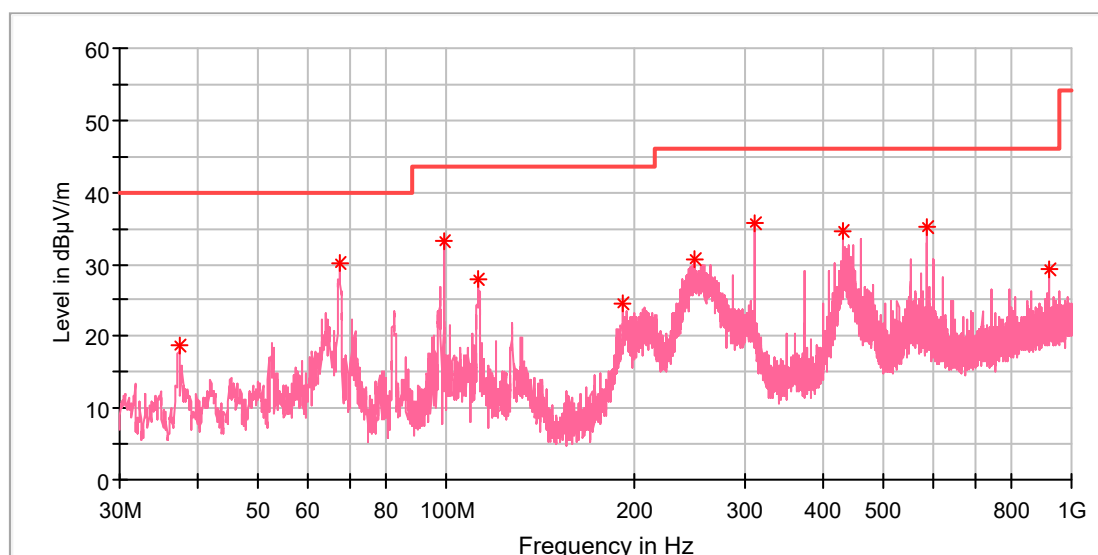
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
42.178889	15.43	40.00	24.57	100.0	H	343.0	-19.6
67.452778	21.29	40.00	18.71	100.0	H	150.0	-21.1
112.665556	28.33	43.50	15.17	100.0	H	284.0	-19.5
212.360000	38.87	43.50	4.63	100.0	H	253.0	-18.8
253.153889	40.30	46.00	5.70	100.0	H	72.0	-17.3
312.000556	42.79	46.00	3.21	100.0	H	40.0	-16.0
432.011111	30.79	46.00	15.21	100.0	H	320.0	-13.1
933.393333	31.90	46.00	14.10	100.0	H	150.0	-4.5

Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---	---	---

EUT Information

EUT Name:	Robotic Lawn Mower
Model:	Raccoon 2 SE
Test Mode:	BLE 1M_Mid channel
Order No/Sample No:	168498100/A004142502-001
Test Voltage:	Battery
Remark:	Temp 22 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

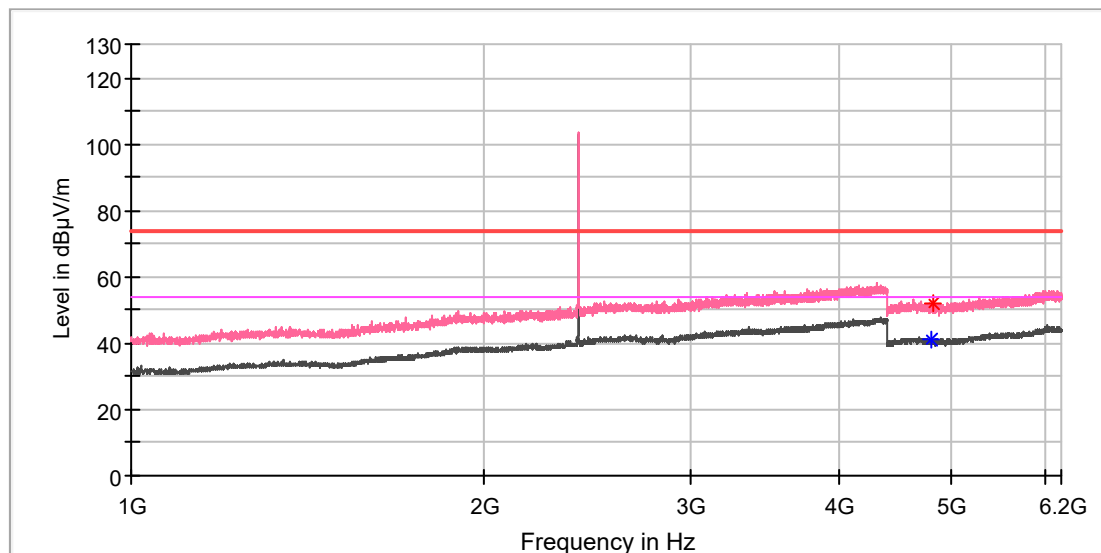
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
37.382778	18.59	40.00	21.41	100.0	V	294.0	-21.0
67.452778	30.16	40.00	9.84	100.0	V	11.0	-21.1
99.247222	33.25	43.50	10.25	100.0	V	0.0	-19.2
112.665556	27.96	43.50	15.54	100.0	V	0.0	-19.5
191.720556	24.57	43.50	18.93	100.0	V	158.0	-19.5
249.220000	30.73	46.00	15.27	100.0	V	135.0	-17.4
312.000556	35.59	46.00	10.41	100.0	V	193.0	-16.0
432.011111	34.69	46.00	11.31	100.0	V	302.0	-13.1
589.690000	35.13	46.00	10.87	100.0	V	0.0	-9.9
924.070556	29.26	46.00	16.74	100.0	V	144.0	-4.5

Final Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

EUT Information

EUT Name:	Robotic Lawn Mower
Model:	Raccoon 2 SE
Test Mode:	BLE 1M_Low channel
Order No/Sample No:	168498100/A004142502-001
Test Voltage:	Battery
Remark:	Temp 22 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

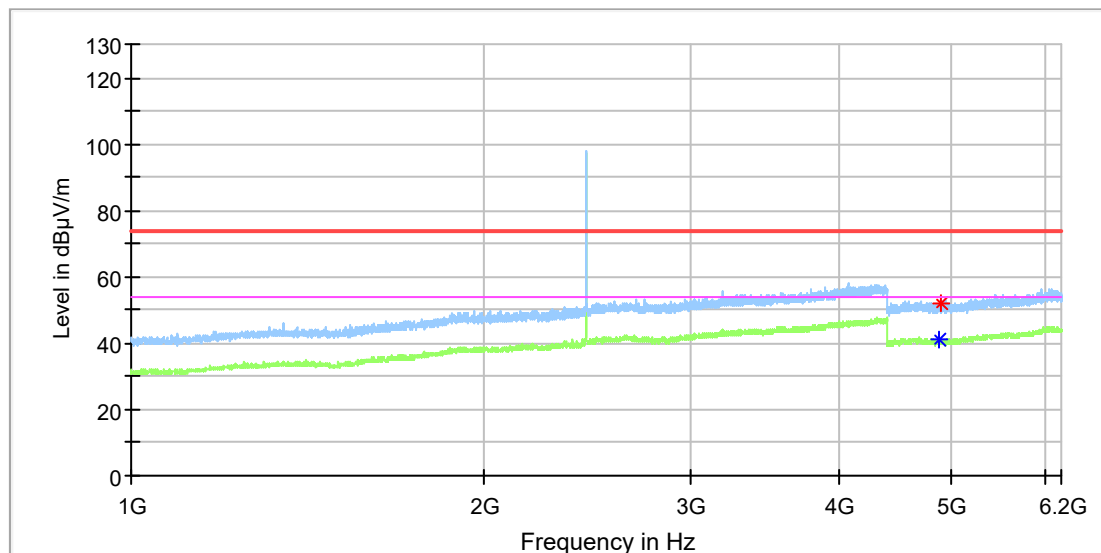
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4803.500000	---	41.04	54.00	12.96	150.0	V	55.0	13.3
4814.000000	51.96	---	74.00	22.04	150.0	V	7.0	13.3

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---		---	---

EUT Information

EUT Name:	Robotic Lawn Mower
Model:	Raccoon 2 SE
Test Mode:	BLE 1M_Mid channel
Order No/Sample No:	168498100/A004142502-001
Test Voltage:	Battery
Remark:	Temp 22 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

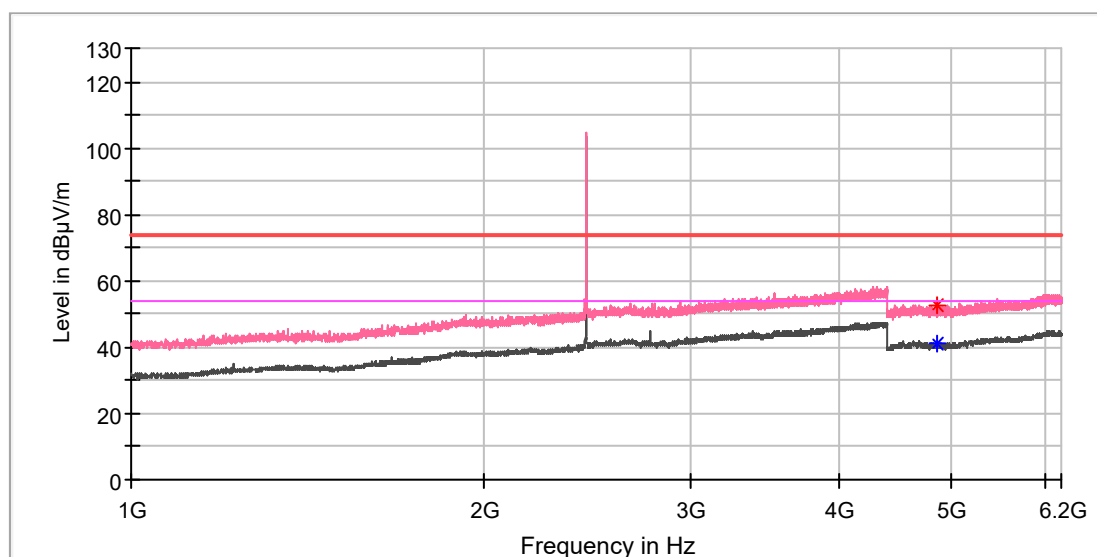
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4870.000000	---	40.91	54.00	13.09	150.0	H	344.0	13.3
4901.500000	52.22	---	74.00	21.78	150.0	H	332.0	13.3

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---		---	---

EUT Information

EUT Name:	Robotic Lawn Mower
Model:	Raccoon 2 SE
Test Mode:	BLE 1M_Mid channel
Order No/Sample No:	168498100/A004142502-001
Test Voltage:	Battery
Remark:	Temp 22 Humi:55%
Test Standard:	FCC 15.247
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Critical_Freqs

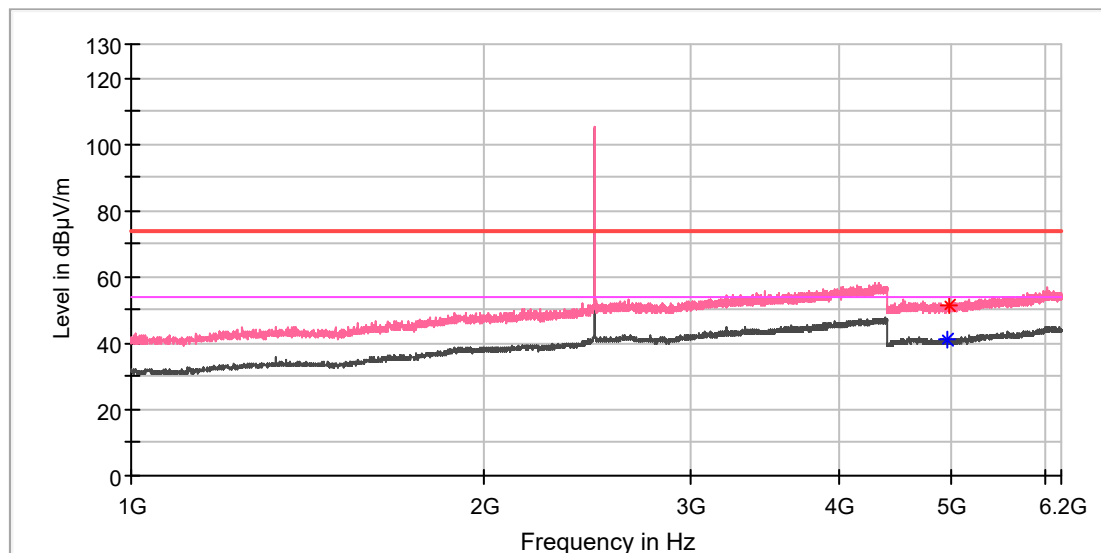
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4855.000000	52.48	---	74.00	21.52	150.0	V	336.0	13.3
4861.500000	---	41.11	54.00	12.89	150.0	V	296.0	13.3

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
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EUT Information

EUT Name:	Robotic Lawn Mower
Model:	Raccoon 2 SE
Test Mode:	BLE 1M_High channel
Order No/Sample No:	168498100/A004142502-001
Test Voltage:	Battery
Remark:	Temp 22 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4961.500000	---	41.01	54.00	12.99	150.0	V	246.0	13.3
4970.000000	51.57	---	74.00	22.43	150.0	V	51.0	13.3

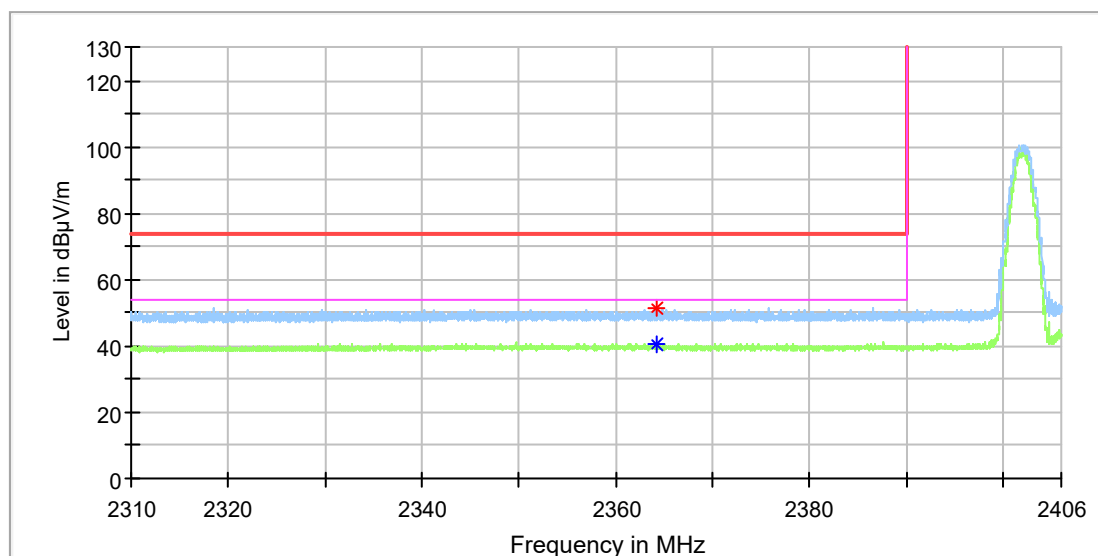
Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
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Appendix A.7: Test Results of Radiated Emissions in Restricted Bands

EUT Information

EUT Name:	Robotic Lawn Mower
Model:	Raccoon 2 SE
Test Mode:	BLE 1M_Low channel
Order No/Sample No:	168498100/A004142502-001
Test Voltage:	Battery
Remark:	Temp 22 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

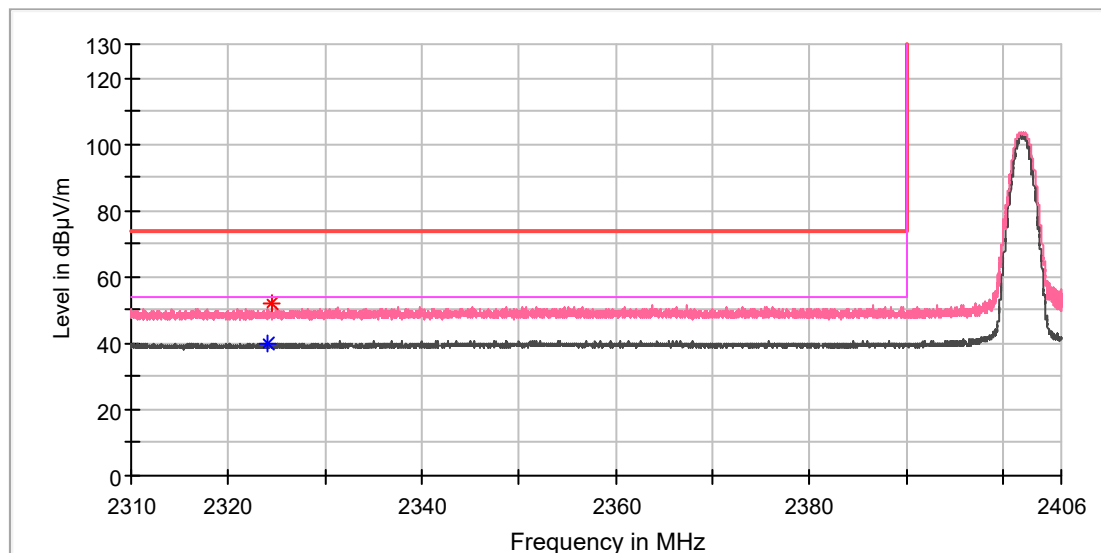
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2364.211765	51.29	---	74.00	22.71	150.0	H	95.0	8.5
2364.225882	---	40.33	54.00	13.67	150.0	H	163.0	8.5

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---		---	---

EUT Information

EUT Name:	Robotic Lawn Mower
Model:	Raccoon 2 SE
Test Mode:	BLE 1M_Low channel
Order No/Sample No:	168498100/A004142502-001
Test Voltage:	Battery
Remark:	Temp 22 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

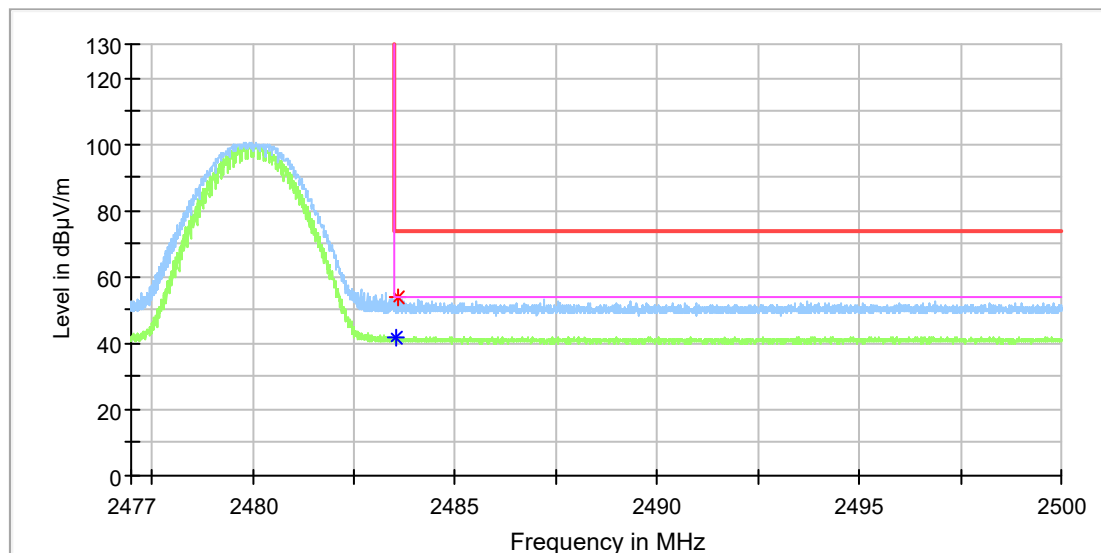
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2324.160000	---	39.87	54.00	14.13	150.0	V	150.0	8.2
2324.414118	51.80	---	74.00	22.20	150.0	V	0.0	8.2

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---		---	---

EUT Information

EUT Name:	Robotic Lawn Mower
Model:	Raccoon 2 SE
Test Mode:	BLE 1M_High channel
Order No/Sample No:	168498100/A004142502-001
Test Voltage:	Battery
Remark:	Temp 22 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

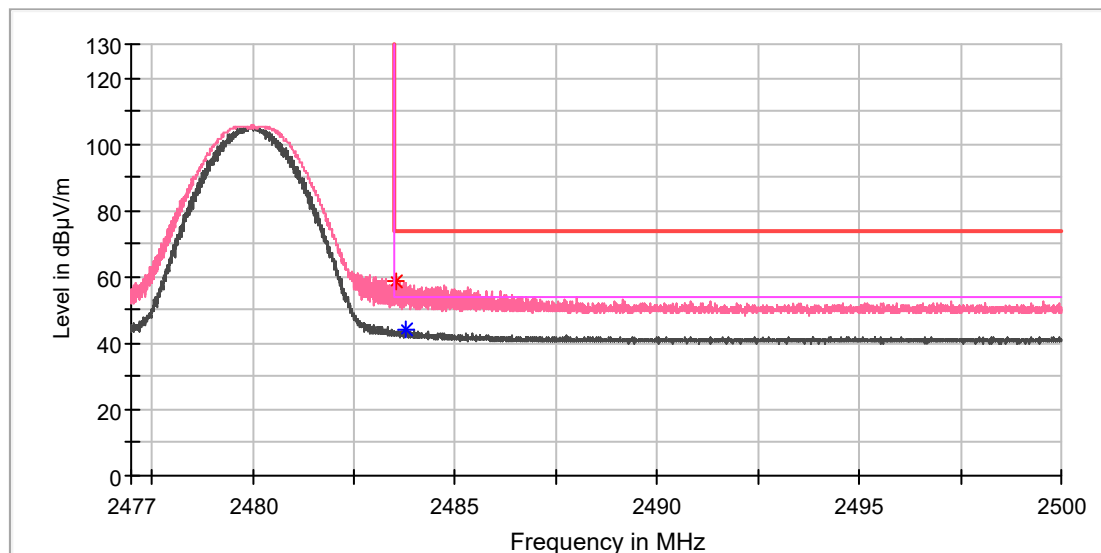
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2483.547794	---	41.71	54.00	12.29	150.0	H	251.0	9.0
2483.599265	53.95	---	74.00	20.05	150.0	H	24.0	9.0

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---		---	---

EUT Information

EUT Name:	Robotic Lawn Mower
Model:	Raccoon 2 SE
Test Mode:	BLE 1M_High channel
Order No/Sample No:	168498100/A004142502-001
Test Voltage:	Battery
Remark:	Temp 22 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2483.551471	58.38	---	74.00	15.62	150.0	V	131.0	9.0
2483.812500	---	44.30	54.00	9.70	150.0	V	131.0	9.0

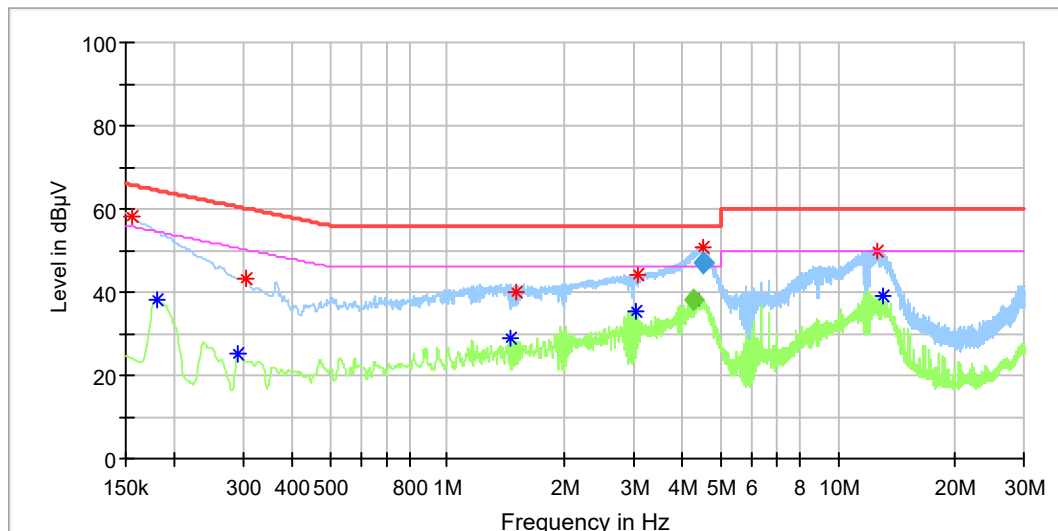
Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
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Appendix A.8: Test Results of Conducted Emission on AC Mains

EUT Information

EUT Name: Robotic Lawn Mower
Order Number: 168498100 P01578913
Model: Raccoon 2 SE
Test Mode: Charging + Normal working
Test Voltage: AC 120V/60Hz
Test Standard: FCC Part 15
Test By:/Review By: Leon Zhu / Murphy Chen
Tem./Hum./Pressure: 24.3°C/51.5%/101kPa
Remark: SR2



Critical Freqs

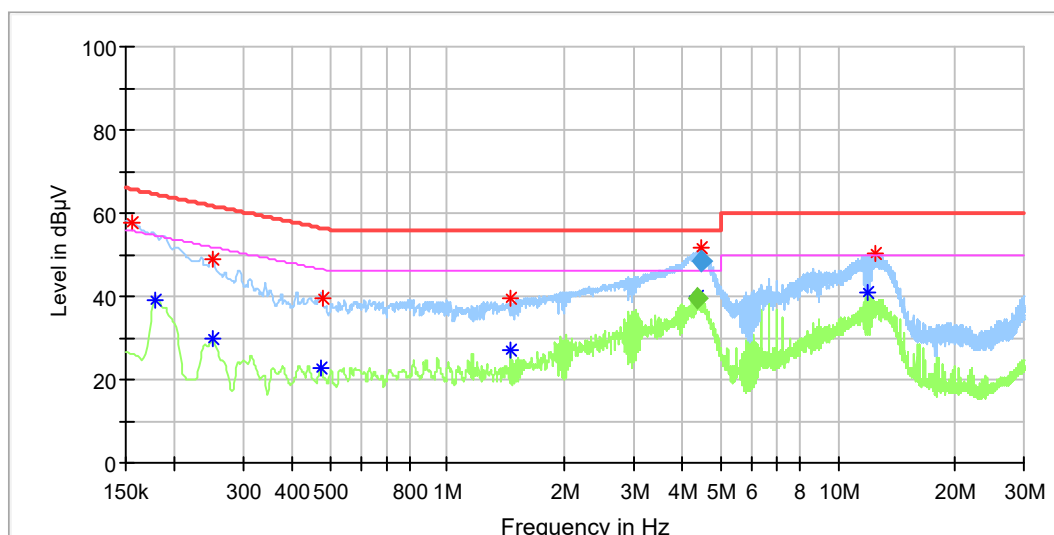
Frequency (MHz)	MaxPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.15	57.94	---	65.73	7.79	L1	10.24
0.18	---	38.34	54.49	16.16	L1	10.24
0.29	---	25.03	50.50	25.47	L1	10.25
0.30	43.46	---	60.13	16.67	L1	10.25
1.45	---	28.92	46.00	17.08	L1	10.29
1.50	40.10	---	56.00	15.90	L1	10.29
3.02	---	35.58	46.00	10.42	L1	10.35
3.06	44.28	---	56.00	11.72	L1	10.35
4.28	---	38.36	46.00	7.64	L1	10.38
4.54	50.52	---	56.00	5.48	L1	10.40
12.60	49.90	---	60.00	10.10	L1	10.72
13.04	---	38.95	50.00	11.05	L1	10.73

Final Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
4.28	---	38.04	46.00	7.96	1000.00	9.00	L1	10.38
4.54	46.88	---	56.00	9.12	1000.00	9.00	L1	10.40

EUT Information

EUT Name: Robotic Lawn Mower
Order Number: 168498100 P01578913
Model: Raccoon 2 SE
Test Mode: Charging + Normal working
Test Voltage: AC 120V/60Hz
Test Standard: FCC Part 15
Test By:/Review By: Leon Zhu / Murphy Chen
Tem./Hum./Pressure: 24.3°C/51.5%/101kPa
Remark: SR2



Critical Freqs

Frequency (MHz)	MaxPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB)
0.15	57.73	---	65.73	8.00	N	10.26
0.18	---	39.05	54.57	15.52	N	10.25
0.25	---	29.67	51.72	22.05	N	10.25
0.25	48.88	---	61.72	12.84	N	10.25
0.48	---	22.92	46.40	23.48	N	10.27
0.48	39.68	---	56.37	16.69	N	10.27
1.45	---	26.86	46.00	19.14	N	10.30
1.45	39.60	---	56.00	16.40	N	10.30
4.35	---	39.95	46.00	6.05	N	10.40
4.46	51.58	---	56.00	4.42	N	10.41
11.98	---	40.97	50.00	9.03	N	10.69
12.47	50.19	---	60.00	9.81	N	10.70

Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
4.35	---	39.43	46.00	6.57	1000.00	9.00	N	10.40
4.46	48.32	---	56.00	7.68	1000.00	9.00	N	10.41