

Appendix B: Test Results of 2.4GHz Wi-Fi

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Appendix B.1: Test Results of Radiated Spurious Emissions

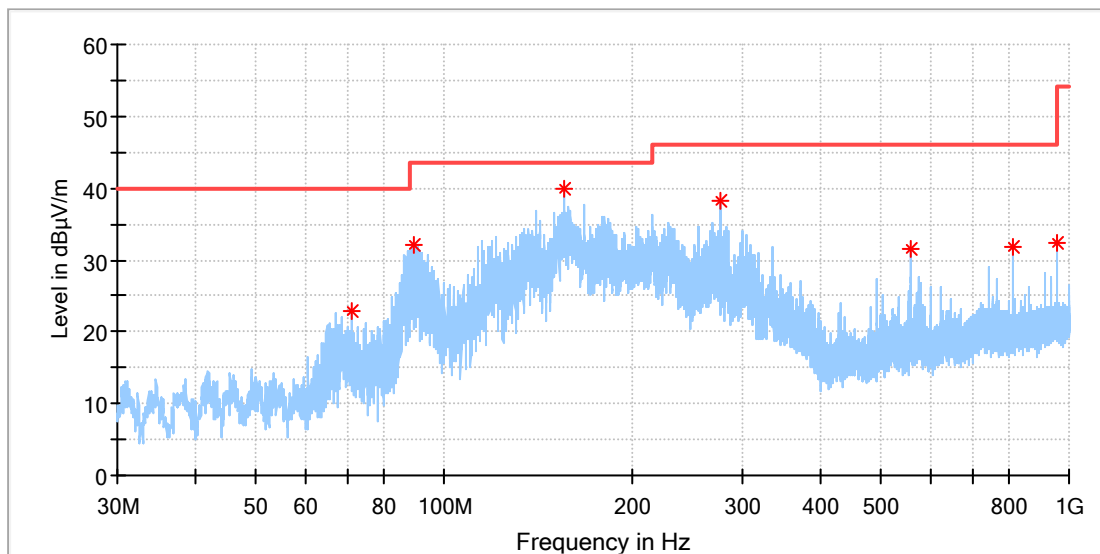
Note:

- 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.

30MHz - 1GHz

EUT Information

EUT Name:	Robot Lawn Mower
Model:	LYMOW ONE
Test Mode:	WIFI 2.4G_11b_Ch6
Order No/Sample No:	168557586/A004000487-002
Test Voltage::	Battery
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

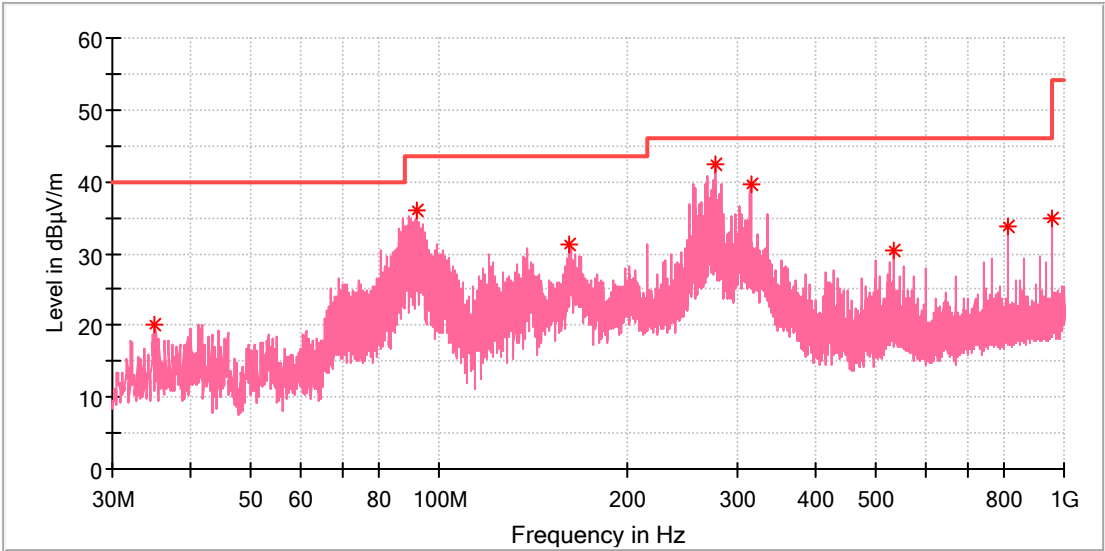
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
71.225000	22.79	40.00	17.21	100.0	H	56.0	-22.3
89.207308	32.10	43.50	11.40	100.0	H	88.0	-21.3
155.689615	39.85	43.50	3.65	100.0	H	103.0	-22.0
276.118846	38.31	46.00	7.69	100.0	H	227.0	-16.8
556.486154	31.58	46.00	14.42	100.0	H	128.0	-10.6
816.035769	31.69	46.00	14.31	100.0	H	203.0	-5.9
960.006154	32.43	54.00	21.57	100.0	H	259.0	-4.1

Final_Result

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

EUT Name:	Robot Lawn Mower
Model:	LYMOW ONE
Test Mode:	WIFI 2.4G_11b_Ch6
Order No/Sample No:	168557586/A004000487-002
Test Voltage::	Battery
Remark:	Temp 23 Humi:53%
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)
35.148462	20.20	40.00	19.80	100.0	V	170.0	-21.9
92.341154	35.93	43.50	7.57	100.0	V	347.0	-20.5
161.211154	31.15	43.50	12.35	100.0	V	51.0	-21.7
276.044231	42.40	46.00	3.60	100.0	V	185.0	-16.8
314.993462	39.73	46.00	6.27	100.0	V	163.0	-15.9
535.519231	30.32	46.00	15.68	100.0	V	277.0	-11.1
816.035769	33.65	46.00	12.35	100.0	V	179.0	-5.9
960.006154	34.94	54.00	19.06	100.0	V	114.0	-4.1

Final_Result

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

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

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
93.7	59.5	59.5	59.5	0.0	100	0	0	0

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
93.7	59.5	59.5	59.5	0.0	100	V	135	0.0

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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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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Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
93.7	118.0	118.0	118.0	0.0	100.0	0	0	0

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

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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Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
93.7	59.5	59.5	59.5	0.0	100	0	0	0

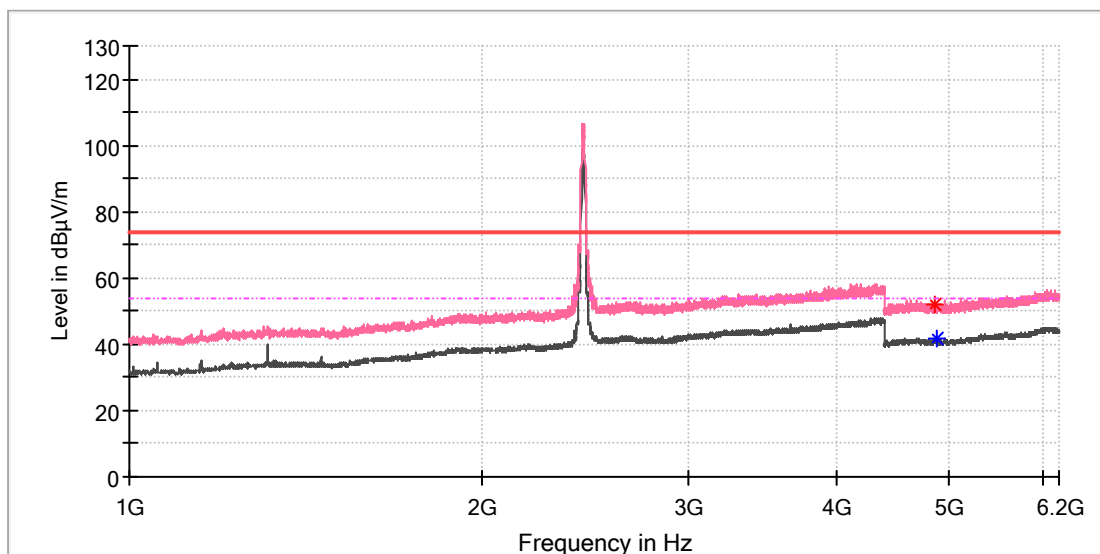
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
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Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
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Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
93.7	122.5	122.5	122.5	0	100	V	135	0

EUT Information

EUT Name: Robot Lawn Mower
Model: LYMOW ONE
Test Mode: WIFI 2.4G_11n20_Ch6
Order No/Sample No: 168557586/A004000487-002
Test Voltage:: Battery
Remark: Temp 23 Humi:53%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical_Freqs

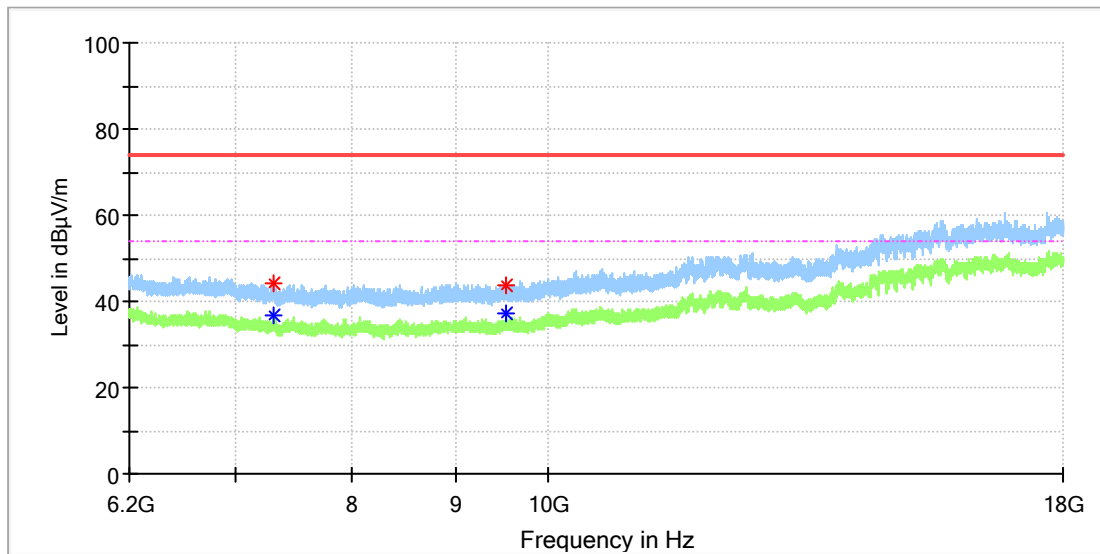
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4854.500000	51.94	---	74.00	22.06	150.0	V	31.0	13.3
4872.000000	---	41.56	54.00	12.44	150.0	V	68.0	13.3

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:	Robot Lawn Mower
Model:	LYMOW ONE
Test Mode:	WIFI 2.4G_11n20_Ch6
Order No/Sample No:	168557586/A004000487-002
Test Voltage::	Battery
Remark:	Temp 23 Humi:53%
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)	PoI	Azimuth (deg)	Corr. (dB/m)
7306.741667	44.34	---	74.00	29.66	150.0	H	132.0	8.3
7309.691667	---	36.66	54.00	17.34	150.0	H	44.0	8.2
9540.875000	43.87	---	74.00	30.13	150.0	H	300.0	10.2
9541.366667	---	37.35	54.00	16.65	150.0	H	300.0	10.2

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
93.5	59.5	59.5	59.5	0.0	100	0	0	0

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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Co-location Mode

This device also contains a certificated single modules for LTE.

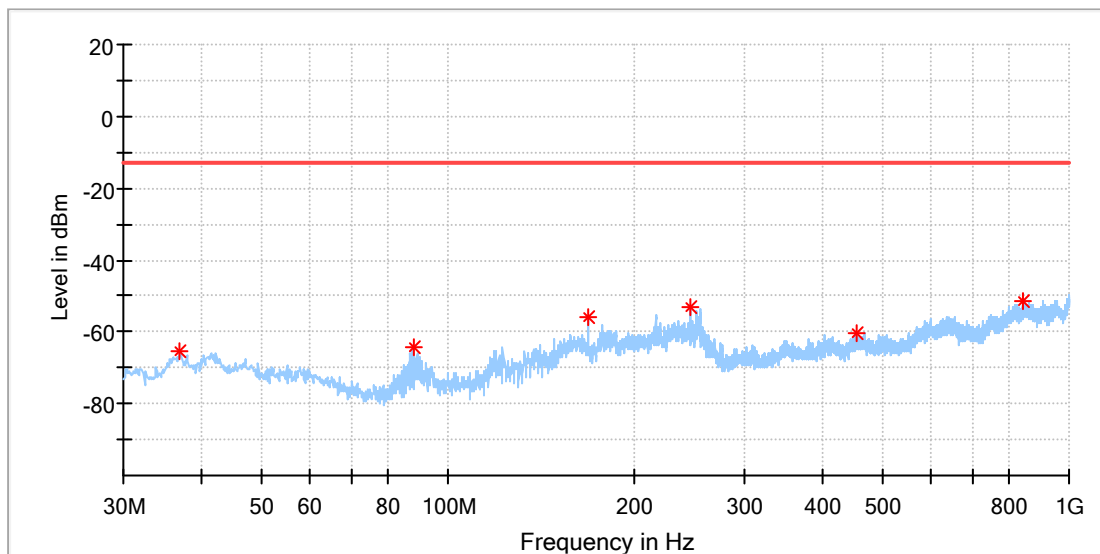
As per KDB 996369 D01 section 7 and KDB 996369 D02 (Question 12), the EMC testing of the Module in simultaneous transmission operations were performed while integrated into the host.

There is no emissions with increased amplitude and/or on different frequencies are detected in simultaneous transmissions compared to what is reported in the modular grant (that refers to single-transmitter operations testing), the test results for worst-cases listed as below:

The highest emissions are the fundamental signals for LTE B2 and/or Wi-Fi.

EUT Information

EUT Name:	Robot Lawn Mower
Model:	LYMOW ONE
Test Mode:	WIFI 2.4G+LTE Band 2
Order No/Sample No:	168557586/A004000487-001
Test Voltage::	Battery
Remark:	Temp 23 Humi:53%
Test Standard:	FCC Part 24
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

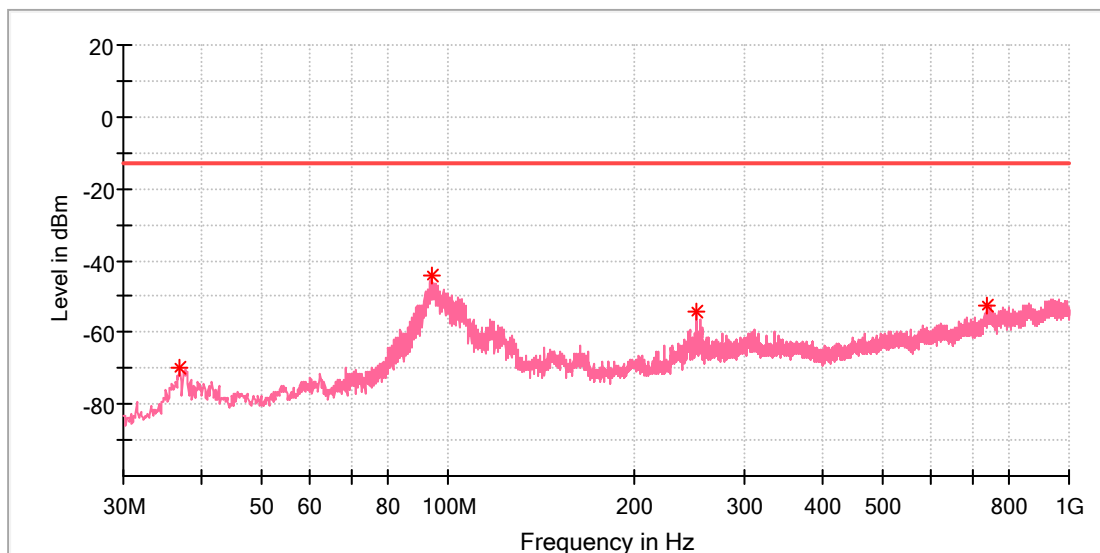


Critical_Freqs

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
37.032500	-65.20	-13.00	52.20	100.0	H	85.0	-113.5
88.078750	-64.17	-13.00	51.17	100.0	H	260.0	-123.0
167.982500	-56.08	-13.00	43.08	100.0	H	232.0	-121.8
245.218750	-53.21	-13.00	40.21	100.0	H	322.0	-110.0
455.951250	-60.44	-13.00	47.44	100.0	H	76.0	-108.4
839.950000	-51.22	-13.00	38.22	100.0	H	150.0	-101.3

EUT Information

EUT Name: Robot Lawn Mower
Model: LYMOW ONE
Test Mode: WIFI 2.4G+LTE Band 2
Order No/Sample No: 168557586/A004000487-001
Test Voltage:: Battery
Remark: Temp 23 Humi:53%
Test Standard: FCC Part 24
Tested By: Kei Zhang
Reviewed By: Terry Yin

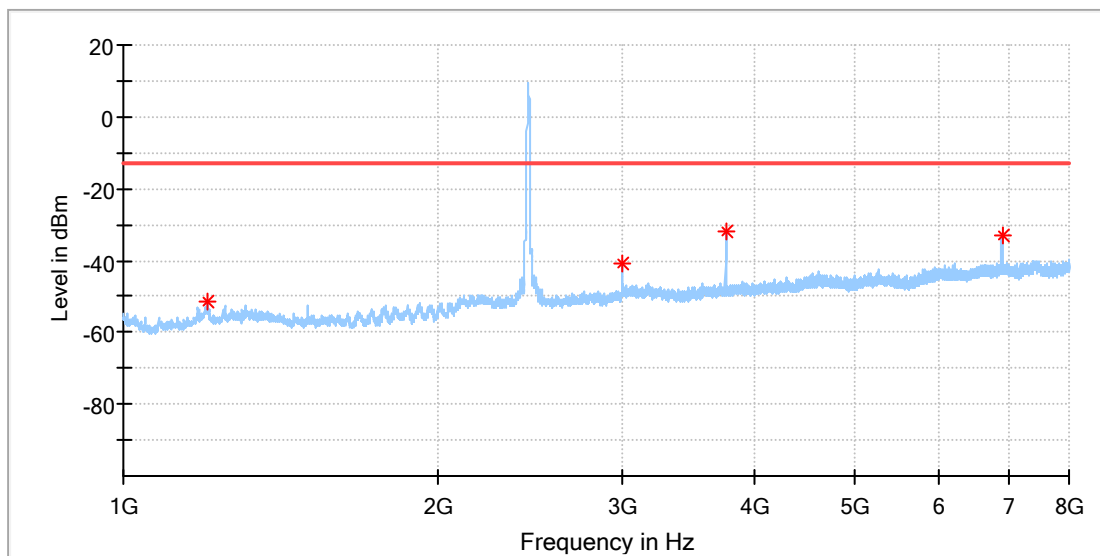


Critical_Freqs

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
37.032500	-69.61	-13.00	56.61	100.0	V	69.0	-125.7
93.898750	-44.13	-13.00	31.13	100.0	V	341.0	-100.3
251.402500	-54.15	-13.00	41.15	100.0	V	156.0	-114.5
738.342500	-52.75	-13.00	39.75	100.0	V	234.0	-101.7

EUT Information

EUT Name:	Robot Lawn Mower
Model:	LYMOW ONE
Test Mode:	WIFI 2.4G+LTE Band 2
Order No/Sample No:	168557586/A004000487-001
Test Voltage::	Battery
Remark:	Temp 23 Humi:53%
Test Standard:	FCC Part 24
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

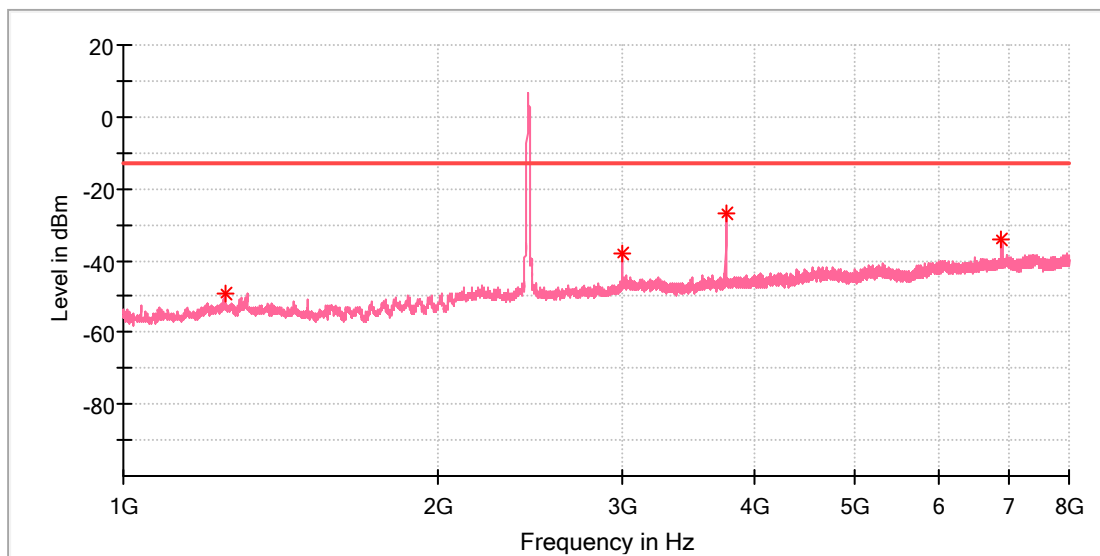


Critical_Freqs

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
1201.500000	-51.47	-13.00	38.47	150.0	H	233.0	-93.2
2994.500000	-40.65	-13.00	27.65	150.0	H	138.0	-87.2
3759.000000	-32.06	-13.00	19.06	150.0	H	232.0	-85.4
6902.500000	-33.21	-13.00	20.21	150.0	H	320.0	-79.0

EUT Information

EUT Name:	Robot Lawn Mower
Model:	LYMOW ONE
Test Mode:	WIFI 2.4G+LTE Band 2
Order No/Sample No:	168557586/A004000487-001
Test Voltage::	Battery
Remark:	Temp 23 Humi:53%
Test Standard:	FCC Part 24
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

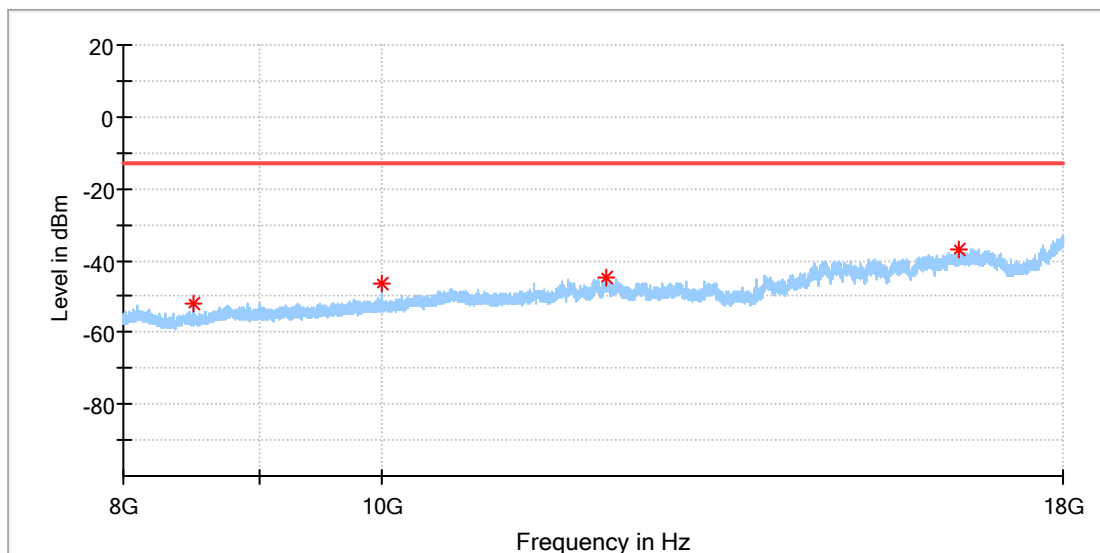


Critical_Freqs

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
1249.500000	-49.02	-13.00	36.02	150.0	V	71.0	-90.1
2994.500000	-38.26	-13.00	25.26	150.0	V	162.0	-85.0
3759.000000	-26.70	-13.00	13.70	150.0	V	324.0	-83.1
6902.000000	-34.04	-13.00	21.04	150.0	V	0.0	-77.1

EUT Information

EUT Name: Robot Lawn Mower
Model: LYMOW ONE
Test Mode: WIFI 2.4G+LTE Band 2
Order No/Sample No: 168557586/A004000487-001
Test Voltage:: Battery
Remark: Temp 23 Humi:53%
Test Standard: FCC Part 24
Tested By: Kei Zhang
Reviewed By: Terry Yin

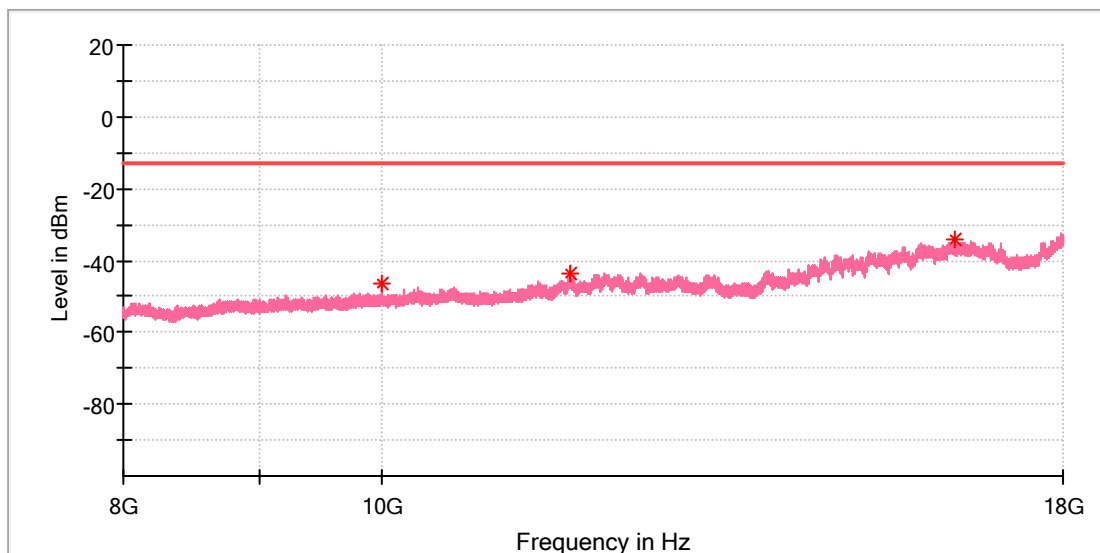


Critical_Freqs

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
8500.000000	-52.04	-13.00	39.04	150.0	H	29.0	-89.1
10000.000000	-46.16	-13.00	33.16	150.0	H	316.0	-85.0
12130.500000	-44.85	-13.00	31.85	150.0	H	3.0	-80.0
16462.500000	-36.97	-13.00	23.97	150.0	H	8.0	-73.7

EUT Information

EUT Name:	Robot Lawn Mower
Model:	LYMOW ONE
Test Mode:	WIFI 2.4G+LTE Band 2
Order No/Sample No:	168557586/A004000487-001
Test Voltage::	Battery
Remark:	Temp 23 Humi:53%
Test Standard:	FCC Part 24
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
10000.000000	-46.47	-13.00	33.47	150.0	V	190.0	-83.5
11755.000000	-43.69	-13.00	30.69	150.0	V	327.0	-79.0
16400.500000	-34.08	-13.00	21.08	150.0	V	184.0	-70.8

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
93.7	122.0	118.0	120.0	2.0	300	V	135	0.0

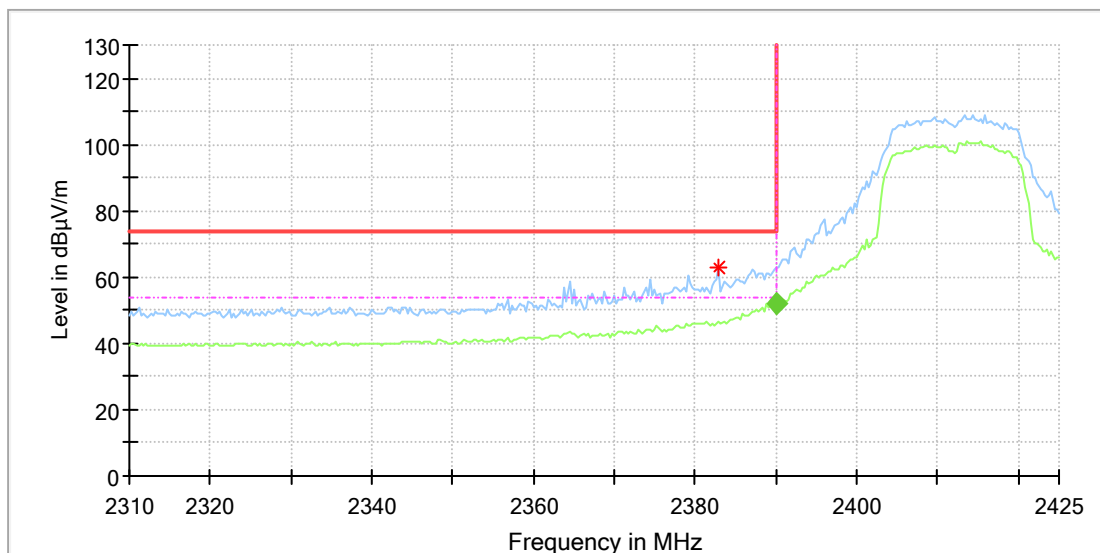
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
93.5	55.5	55.5	55.5	0.0	100.0	0	0	0

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
93.5	115	110	110	0	100	V	135	0

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: Robot Lawn Mower
Model: LYMOW ONE
Test Mode: WIFI 2.4G_11g_Ch1
Order No/Sample No: 168557586/A004000487-002
Test Voltage:: Battery
Remark: Temp 23 Humi:53%
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)
2382.941177	63.08	---	74.00	10.92	150.0	H	149.0	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)
2390.000000	---	51.96	54.00	2.04	150.0	H	126.0	8.5

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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Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
93.7	118.0	117.0	117.0	0.0	100	V	135	0.0

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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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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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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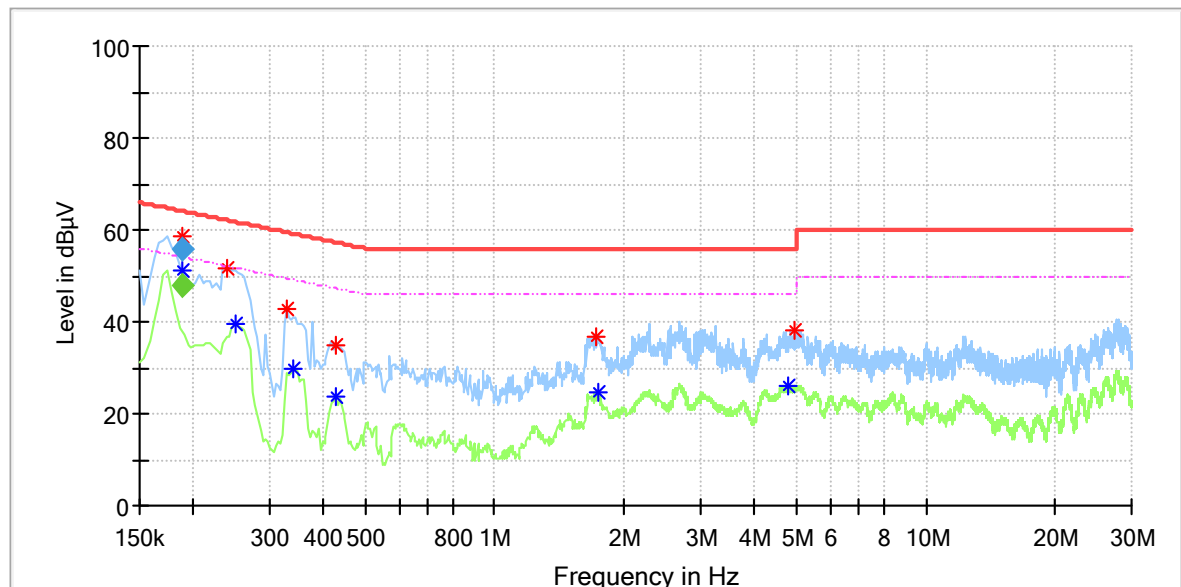
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
93.7	118.0	117.0	117.0	0.0	100.0	0	0	0

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
93.7	59.5	59.5	59.5	0.0	100	h	135	0.0

Appendix B.3: Test Results of Conducted emissions of AC mains

EUT Information

EUT Name: Robot Lawn Robot Lawn Mower
Order Number: 168557586(P01794688)
Model: LYMOW ONE
Test Voltage: AC 120V/60Hz
Test Standard: FCC Part 15B
Test By:/Review By: Junhua Sun/ Murphy Chen
Tem./Hum./Pressure: 24.9°C/50.4%/101kPa
Remark: SR2



Critical Freqs

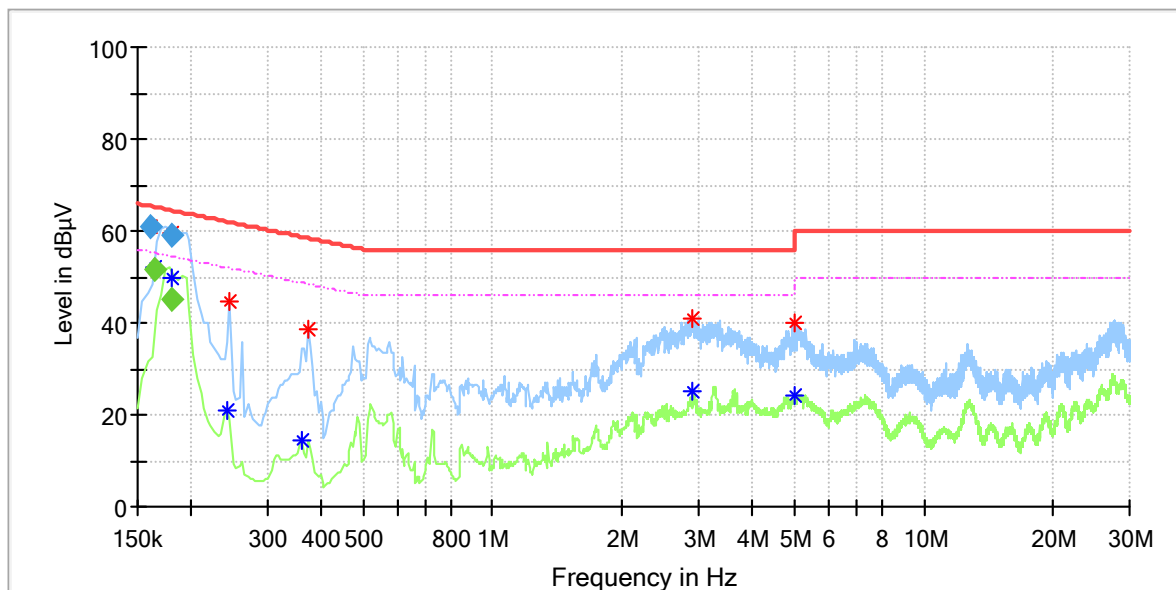
Frequency (MHz)	MaxPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.188	---	51.06	54.77	3.71	L1	10.2
0.188	58.56	---	64.77	6.21	L1	10.2
0.238	51.78	---	62.17	10.39	L1	10.2
0.250	---	39.40	51.76	12.35	L1	10.2
0.330	42.72	---	59.45	16.73	L1	10.2
0.342	---	29.88	49.16	19.27	L1	10.2
0.426	---	23.66	47.33	23.67	L1	10.2
0.430	34.94	---	57.25	22.31	L1	10.2
1.722	36.95	---	56.00	19.05	L1	10.3
1.738	---	24.57	46.00	21.43	L1	10.3
4.810	---	26.10	46.00	19.90	L1	10.4
4.970	37.98	---	56.00	18.02	L1	10.4

Final Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.188	55.61	---	64.15	8.53	1000.0	9.000	L1	10.2
0.188	---	48.04	54.15	6.11	1000.0	9.000	L1	10.2

EUT Information

EUT Name: Robot Lawn Robot Lawn Mower
Order Number: 168557586(P01794688)
Model: LYMOW ONE
Test Voltage: AC 120V/60Hz
Test Standard: FCC Part 15B
Test By:/Review By: Junhua Sun/ Murphy Chen
Tem./Hum./Pressure: 24.9°C/50.4%/101kPa
Remark: SR2



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.161	61.07	---	64.77	3.70	N	10.2
0.165	---	52.06	54.58	2.52	N	10.2
0.181	---	49.66	53.86	4.20	N	10.2
0.181	59.39	---	63.86	4.47	N	10.2
0.242	---	21.13	52.03	30.89	N	10.2
0.246	44.53	---	61.89	17.36	N	10.2
0.362	---	14.33	48.68	34.35	N	10.2
0.374	38.78	---	58.41	19.63	N	10.2
2.902	40.83	---	56.00	15.17	N	10.3
2.914	---	25.23	46.00	20.77	N	10.3
4.998	---	24.23	46.00	21.77	N	10.4
5.006	39.90	---	60.00	20.10	N	10.4

Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.161	61.01	---	65.44	4.43	1000.0	9.000	N	10.2
0.165	---	51.48	55.23	3.75	1000.0	9.000	N	10.2
0.181	---	44.89	54.46	9.58	1000.0	9.000	N	10.2
0.181	59.26	---	64.46	5.20	1000.0	9.000	N	10.2