

Appendix A: Test Results

APPENDIX A: TEST RESULTS	1
APPENDIX A.1: TEST RESULTS OF FIELD STRENGTH OF FUNDAMENTAL & HARMONICS.....	2
30MHz - 1GHz	2
1GHz - 18GHz.....	4
APPENDIX A.2: TEST RESULTS OF 20DB BANDWIDTH	16
APPENDIX A.3: TEST RESULTS OF 99% BANDWIDTH.....	18
APPENDIX A.4: TEST RESULTS OF BAND EDGE	20
APPENDIX A.5: TEST RESULTS OF CONDUCTED EMISSION ON AC MAINS.....	24

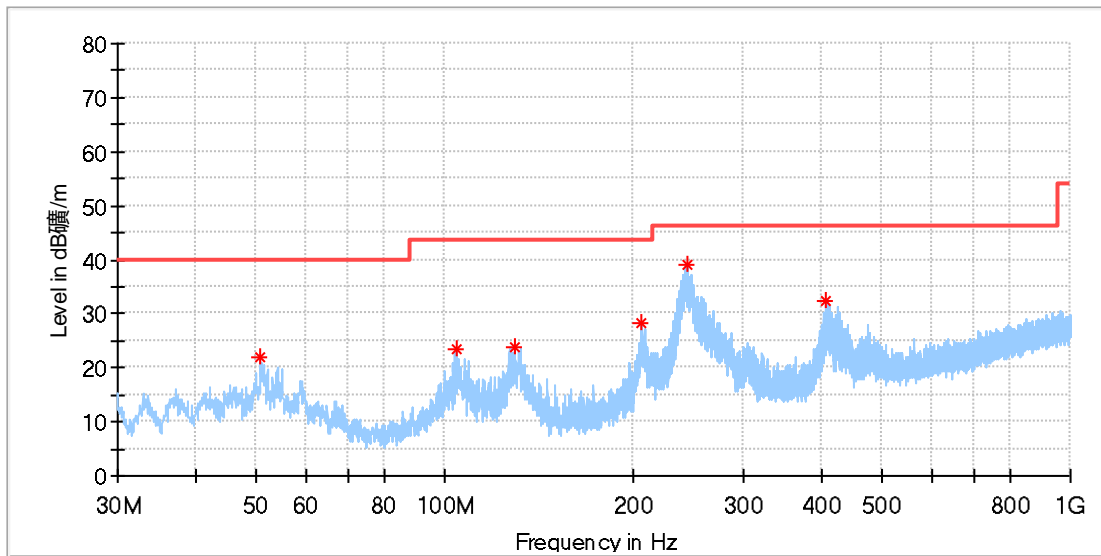
Appendix A.1: Test Results of Field strength of fundamental & harmonics

Note: The testing was carried out within frequency range 9kHz to the tenth harmonics. The measurement results below 30MHz and 18GHz to 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:	Wireless Dongle
Model:	MD023
Test Mode:	2.4G M CH
Order No/Sample No:	168413778
Test Voltage:	DC 5V
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.249/RSS-210
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

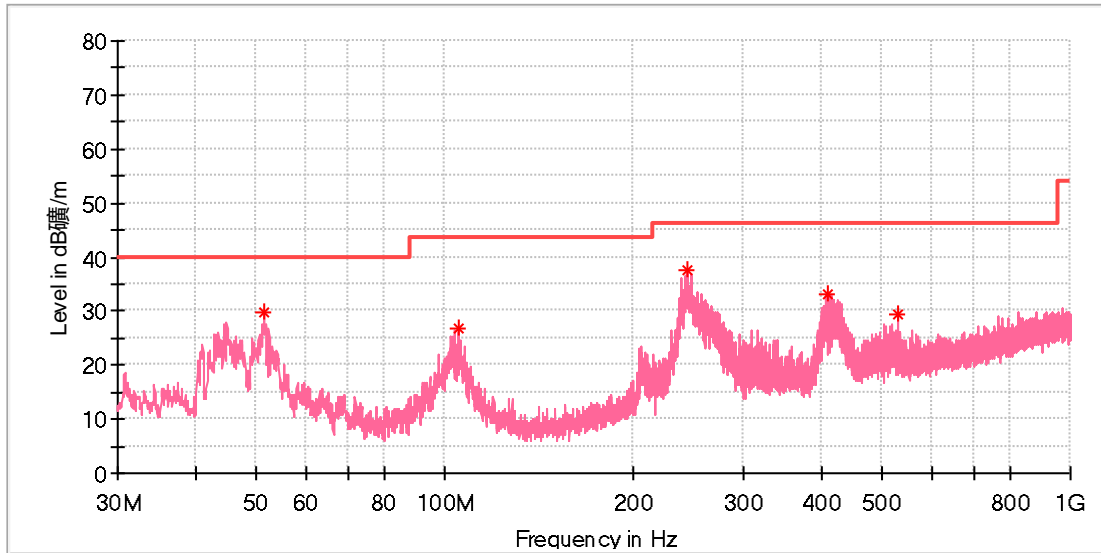


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
50.661000	21.87	40.00	18.13	100.0	H	36.0	-18.3
104.350500	23.40	43.50	20.10	100.0	H	86.0	-18.8
129.376500	23.81	43.50	19.69	100.0	H	141.0	-21.8
206.734000	28.43	43.50	15.07	100.0	H	92.0	-18.9
243.642500	39.02	46.00	6.98	100.0	H	298.0	-17.6
407.718000	32.52	46.00	13.48	100.0	H	292.0	-13.5

EUT Information

EUT Name: Wireless Dongle
 Model: MD023
 Test Mode: 2.4G M CH
 Order No/Sample No: 168413778
 Test Voltage: DC 5V
 Remark: Temp 23 Humi:53%
 Test Standard: FCC 15.249/RSS-210
 Tested By: Kei Zhang
 Reviewed By: Terry Yin



Critical Freqs

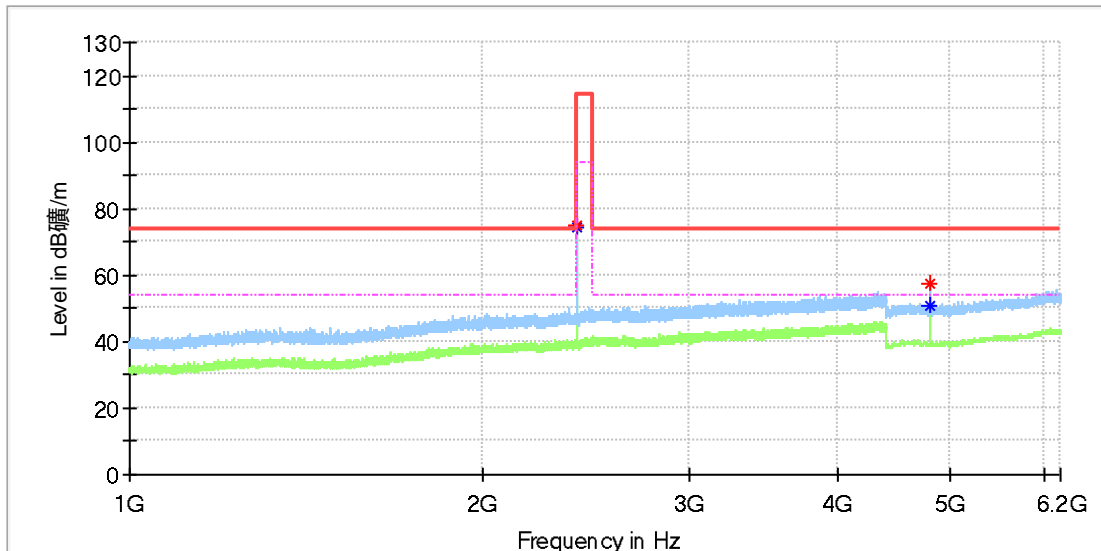
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
51.388500	29.90	40.00	10.10	100.0	V	300.0	-18.3
104.981000	26.93	43.50	16.57	100.0	V	0.0	-18.7
243.739500	37.67	46.00	8.33	100.0	V	33.0	-17.6
408.348500	33.29	46.00	12.71	100.0	V	0.0	-13.5
531.441500	29.31	46.00	16.69	100.0	V	211.0	-11.3

1GHz - 18GHz

Note: The highest waveform in the figure is 2.4GHz Fundamental.

EUT Information

EUT Name:	Wireless Dongle
Model:	MD023
Test Mode:	2.4G L CH
Order No/Sample No:	168413778
Test Voltage:	DC 5V
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.249/RSS-210
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

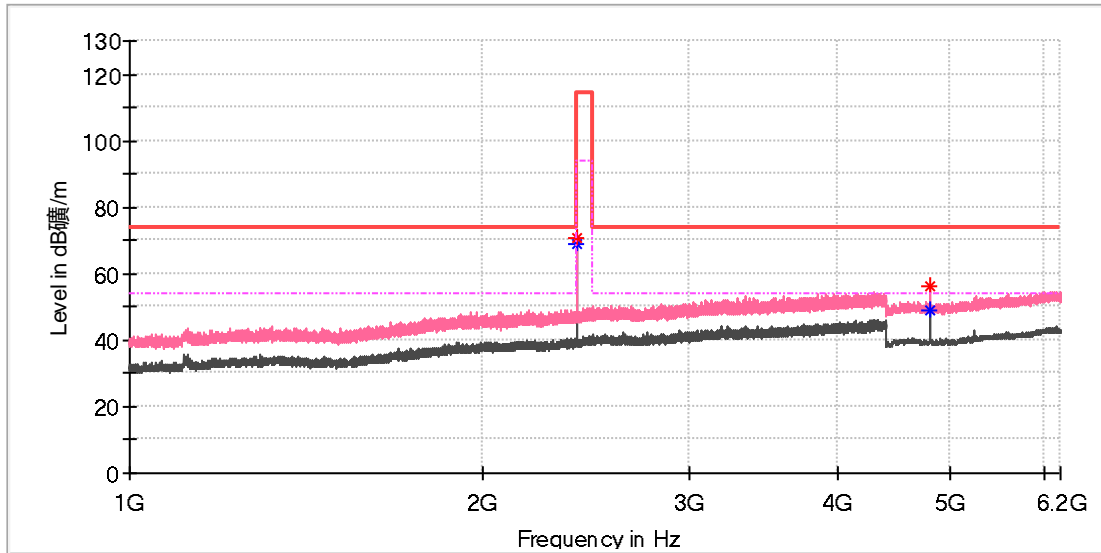


Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2401.820000	---	74.58	94.00	19.42	100.0	H	329.0	7.0
2402.160000	75.09	---	114.00	38.91	100.0	H	329.0	7.0
4803.500000	57.18	---	74.00	16.82	100.0	H	350.0	11.8
4804.500000	---	50.75	54.00	3.25	100.0	H	266.0	11.8

EUT Information

EUT Name:	Wireless Dongle
Model:	MD023
Test Mode:	2.4G L CH
Order No/Sample No:	168413778
Test Voltage:	DC 5V
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.249/RSS-210
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

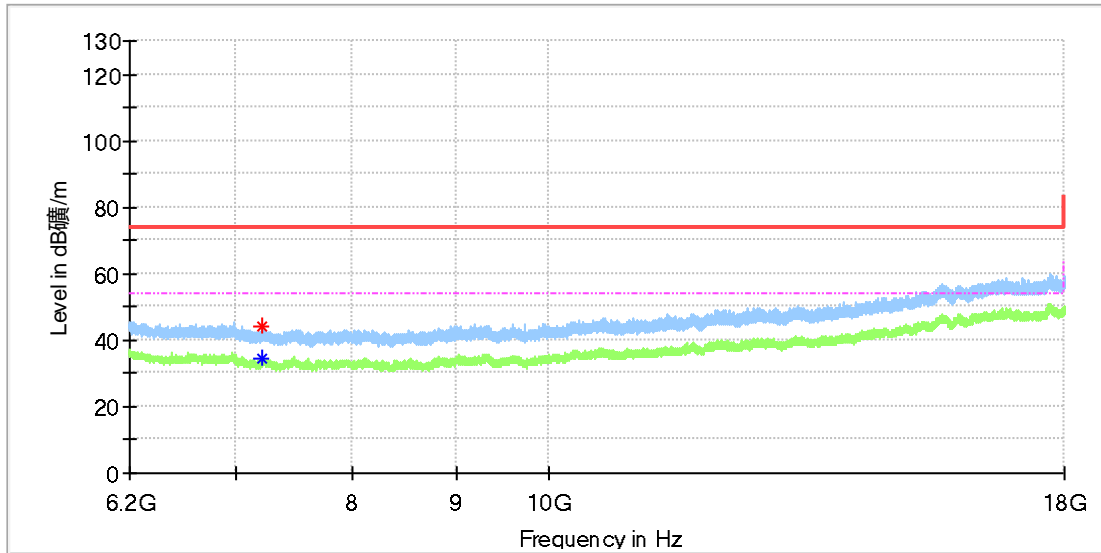


Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2402.330000	71.04	---	114.00	42.96	100.0	V	40.0	7.0
2402.500000	---	69.85	94.00	24.15	100.0	V	28.0	7.0
4803.500000	56.32	---	74.00	17.68	100.0	V	129.0	11.8
4804.000000	---	49.10	54.00	4.90	100.0	V	129.0	11.8

EUT Information

EUT Name:	Wireless Dongle
Model:	MD023
Test Mode:	2.4G L CH
Order No/Sample No:	168413778
Test Voltage:	DC 5V
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.249/RSS-210
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

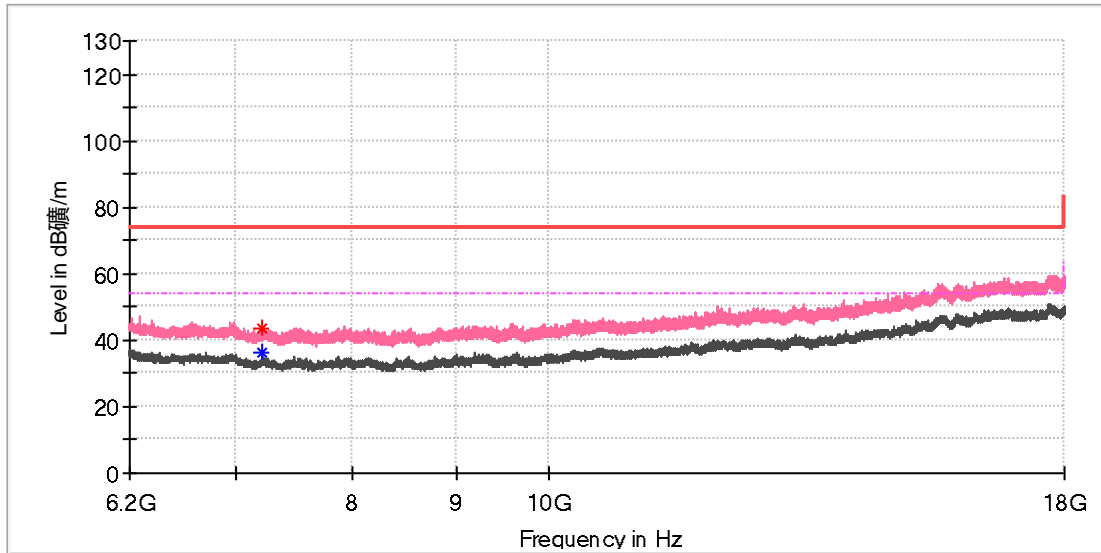


Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7204.475000	---	34.40	54.00	19.60	100.0	H	11.0	8.8
7212.341667	43.85	---	74.00	30.15	100.0	H	85.0	8.7

EUT Information

EUT Name:	Wireless Dongle
Model:	MD023
Test Mode:	2.4G L CH
Order No/Sample No:	168413778
Test Voltage:	DC 5V
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.249/RSS-210
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

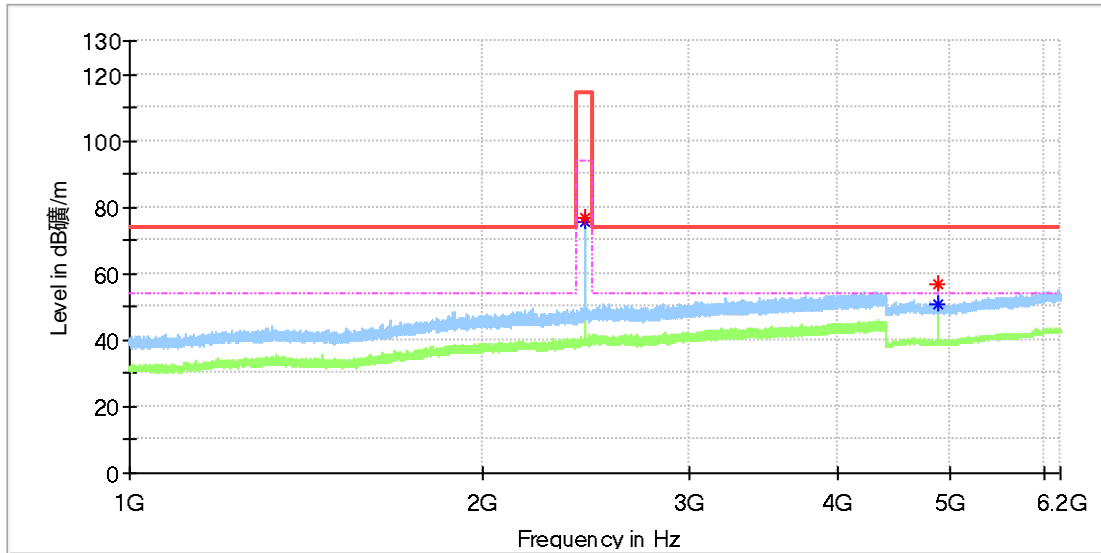


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7204.966667	---	36.30	54.00	17.70	100.0	V	359.0	8.8
7205.950000	43.32	---	74.00	30.68	100.0	V	335.0	8.8

EUT Information

EUT Name:	Wireless Dongle
Model:	MD023
Test Mode:	2.4G M CH
Order No/Sample No:	168413778
Test Voltage:	DC 5V
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.249/RSS-210
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

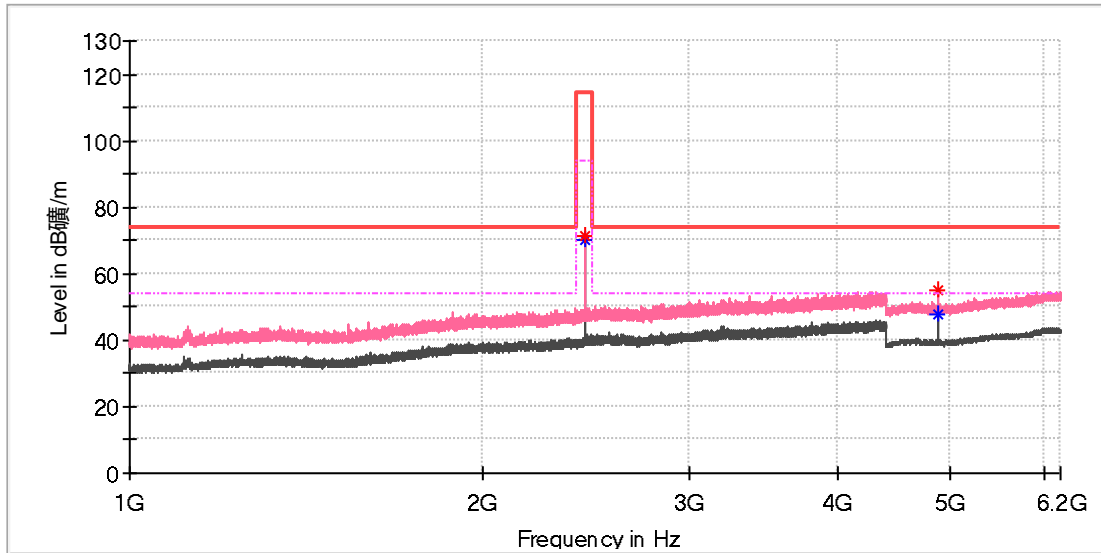


Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2440.070000	---	75.68	94.00	18.32	100.0	H	324.0	7.4
2440.240000	76.66	---	114.00	37.34	100.0	H	324.0	7.4
4879.500000	---	50.57	54.00	3.43	100.0	H	191.0	11.8
4880.000000	56.99	---	74.00	17.01	100.0	H	191.0	11.8

EUT Information

EUT Name:	Wireless Dongle
Model:	MD023
Test Mode:	2.4G M CH
Order No/Sample No:	168413778
Test Voltage:	DC 5V
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.249/RSS-210
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

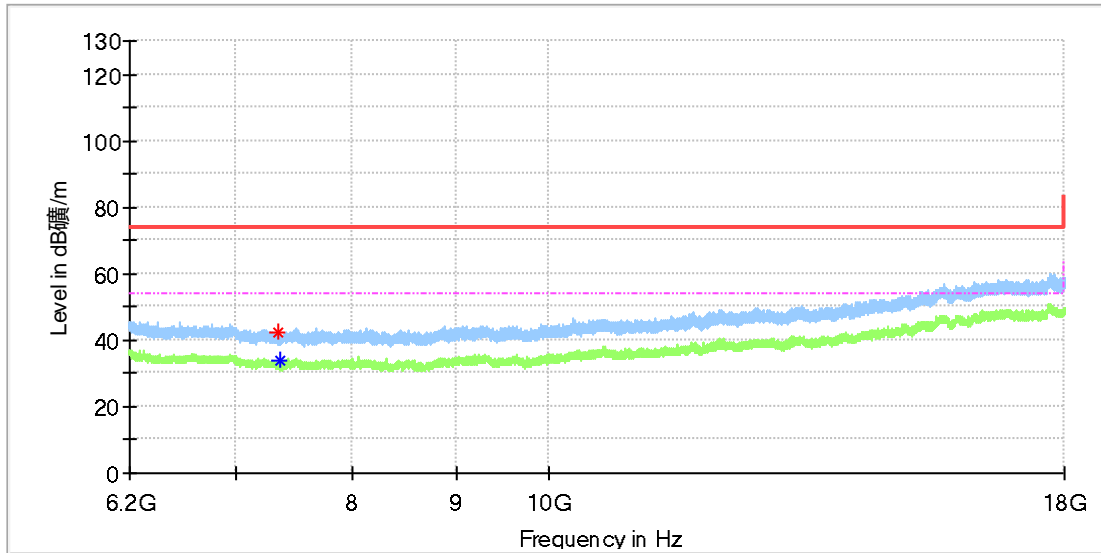


Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2439.900000	71.49	---	114.00	42.51	100.0	V	40.0	7.4
2440.070000	---	70.42	94.00	23.58	100.0	V	40.0	7.4
4879.500000	54.80	---	74.00	19.20	100.0	V	131.0	11.8
4880.000000	---	47.73	54.00	6.27	100.0	V	143.0	11.8

EUT Information

EUT Name:	Wireless Dongle
Model:	MD023
Test Mode:	2.4G M CH
Order No/Sample No:	168413778
Test Voltage:	DC 5V
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.249/RSS-210
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

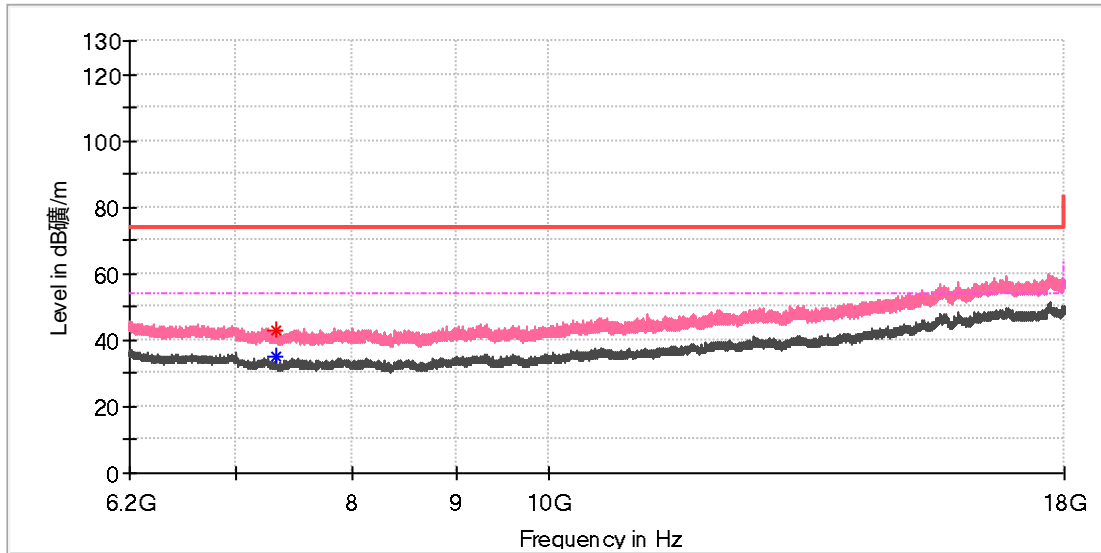


Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7336.241667	42.08	---	74.00	31.92	100.0	H	207.0	8.1
7354.433333	---	34.03	54.00	19.97	100.0	H	314.0	8.1

EUT Information

EUT Name:	Wireless Dongle
Model:	MD023
Test Mode:	2.4G M CH
Order No/Sample No:	168413778
Test Voltage:	DC 5V
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.249/RSS-210
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

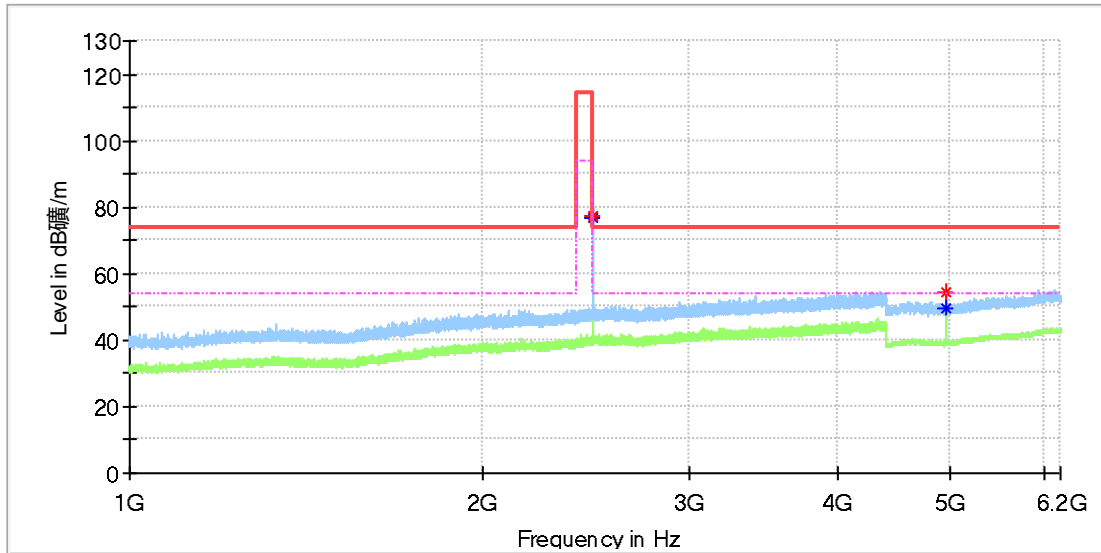


Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7319.525000	43.09	---	74.00	30.91	100.0	V	8.0	8.2
7320.508333	---	35.33	54.00	18.67	100.0	V	1.0	8.2

EUT Information

EUT Name:	Wireless Dongle
Model:	MD023
Test Mode:	2.4G H CH
Order No/Sample No:	168413778
Test Voltage:	DC 5V
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.249/RSS-210
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

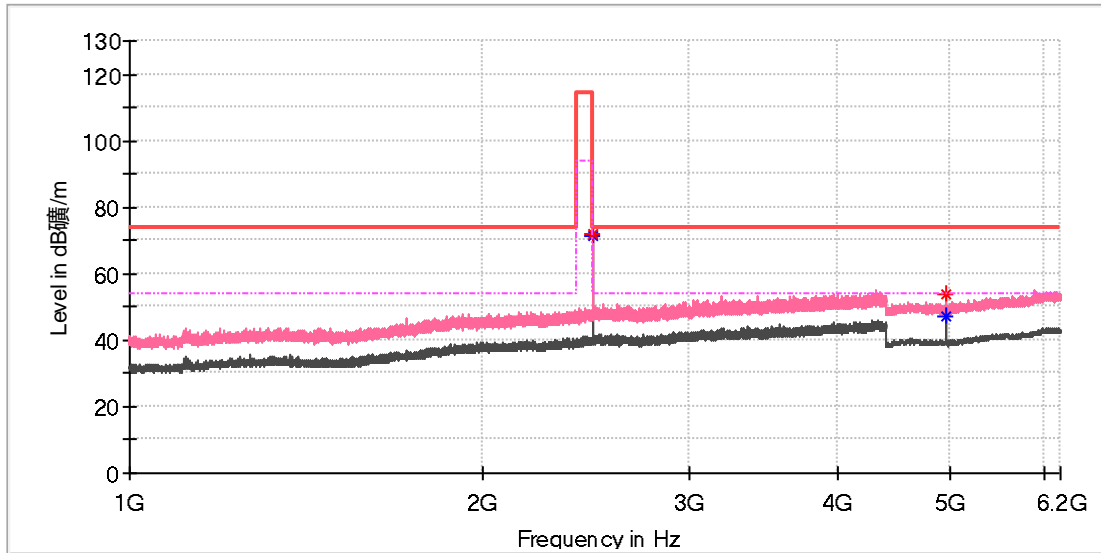


Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2480.020000	---	76.77	94.00	17.23	100.0	H	323.0	7.4
2480.360000	77.65	---	114.00	36.35	100.0	H	323.0	7.4
4959.000000	54.68	---	74.00	19.32	100.0	H	200.0	11.8
4960.000000	---	49.62	54.00	4.38	100.0	H	194.0	11.8

EUT Information

EUT Name: Wireless Dongle
 Model: MD023
 Test Mode: 2.4G H CH
 Order No/Sample No: 168413778
 Test Voltage: DC 5V
 Remark: Temp 23 Humi:53%
 Test Standard: FCC 15.249/RSS-210
 Tested By: Kei Zhang
 Reviewed By: Terry Yin

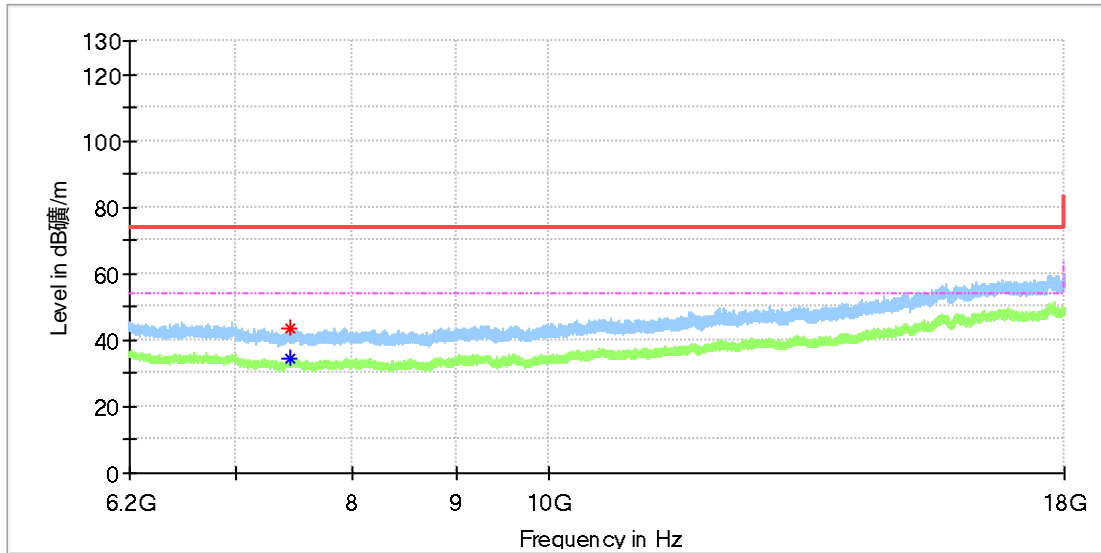


Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2480.020000	---	71.09	94.00	22.91	100.0	V	46.0	7.4
2480.190000	72.25	---	114.00	41.75	100.0	V	46.0	7.4
4960.000000	---	47.13	54.00	6.87	100.0	V	149.0	11.8
4960.500000	54.11	---	74.00	19.89	100.0	V	149.0	11.8

EUT Information

EUT Name:	Wireless Dongle
Model:	MD023
Test Mode:	2.4G H CH
Order No/Sample No:	168413778
Test Voltage:	DC 5V
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.249/RSS-210
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

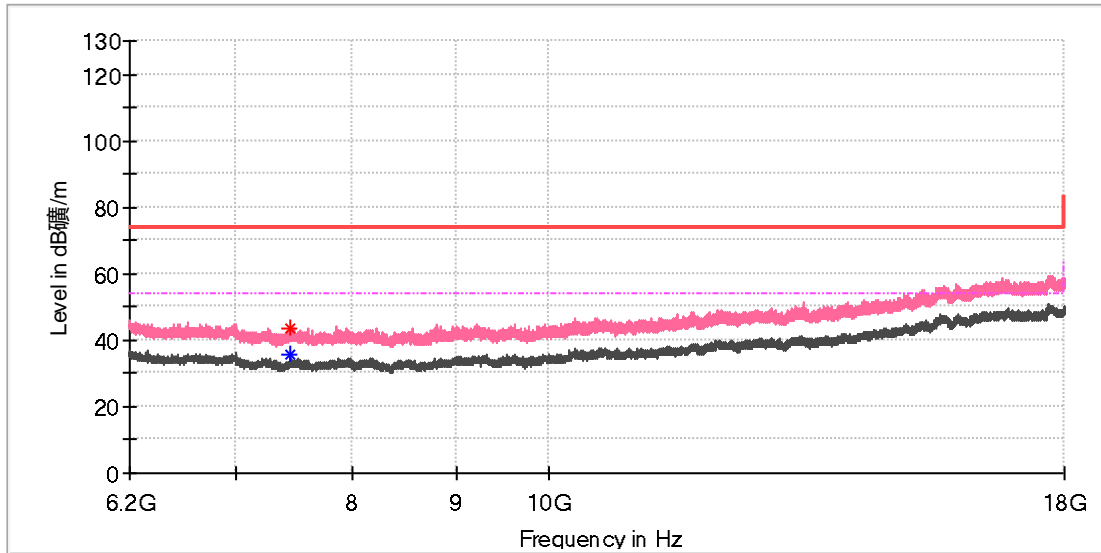


Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7438.508333	43.38	---	74.00	30.62	100.0	H	197.0	8.4
7452.766667	---	34.20	54.00	19.80	100.0	H	74.0	8.5

EUT Information

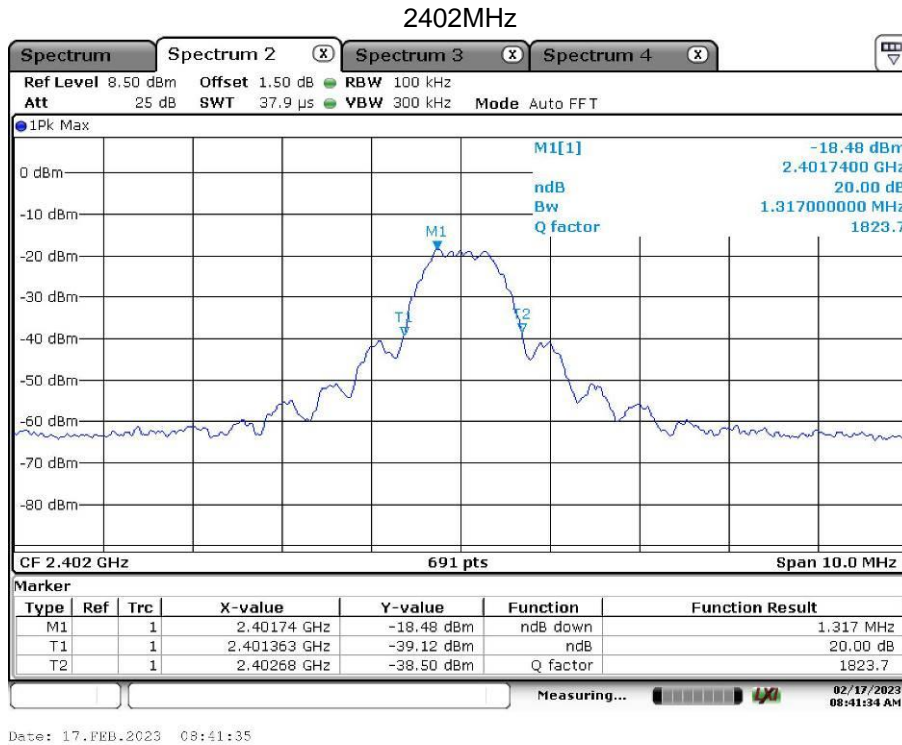
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Model:	MD023
Test Mode:	2.4G H CH
Order No/Sample No:	168413778
Test Voltage:	DC 5V
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.249/RSS-210
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



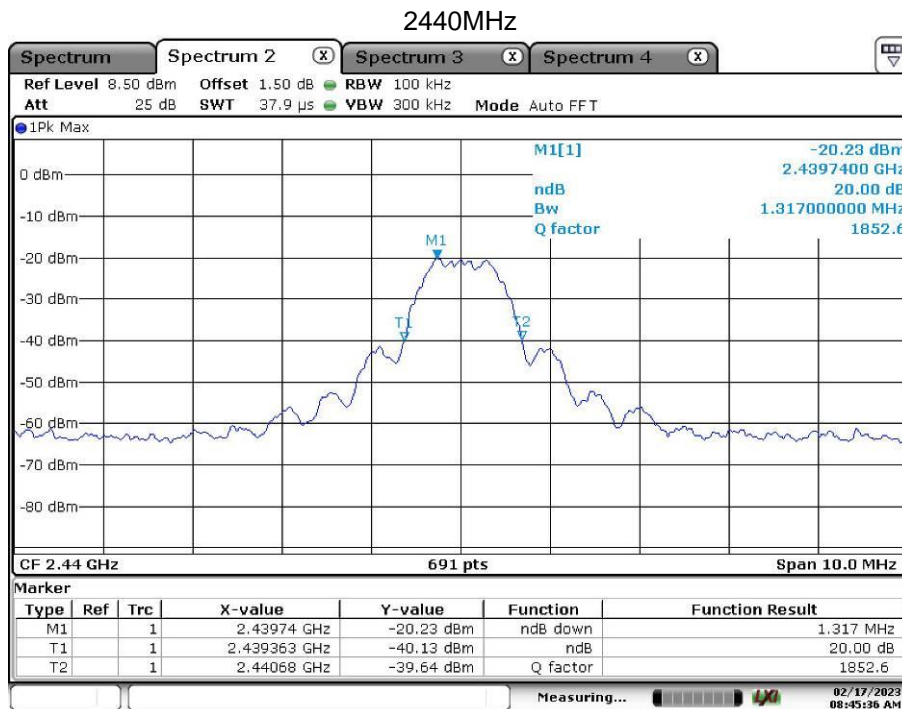
Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7440.966667	---	35.47	54.00	18.53	100.0	V	18.0	8.4
7453.258333	43.59	---	74.00	30.41	100.0	V	29.0	8.5

Appendix A.2: Test Results of 20dB Bandwidth

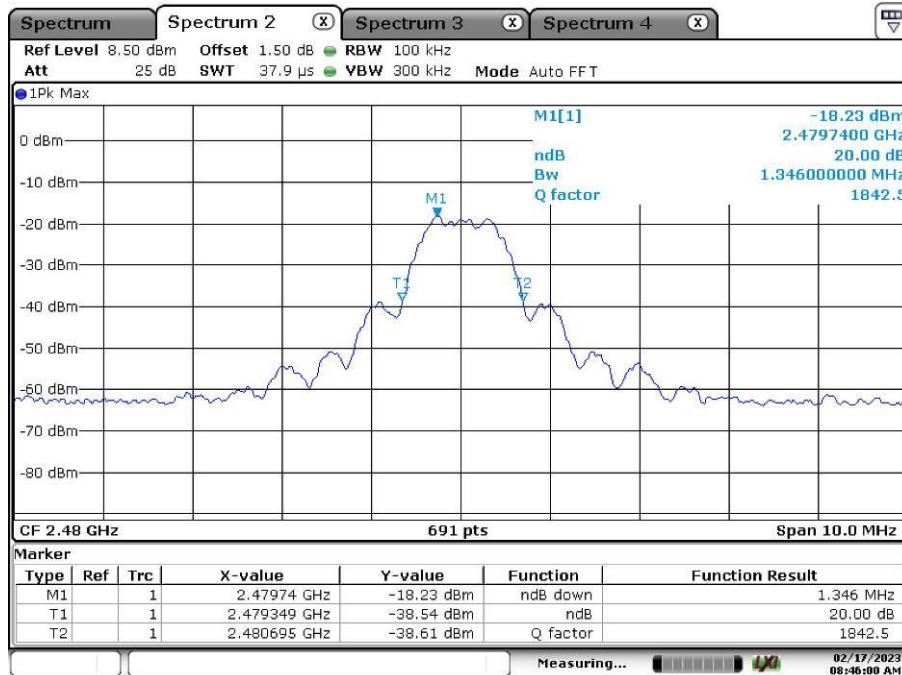


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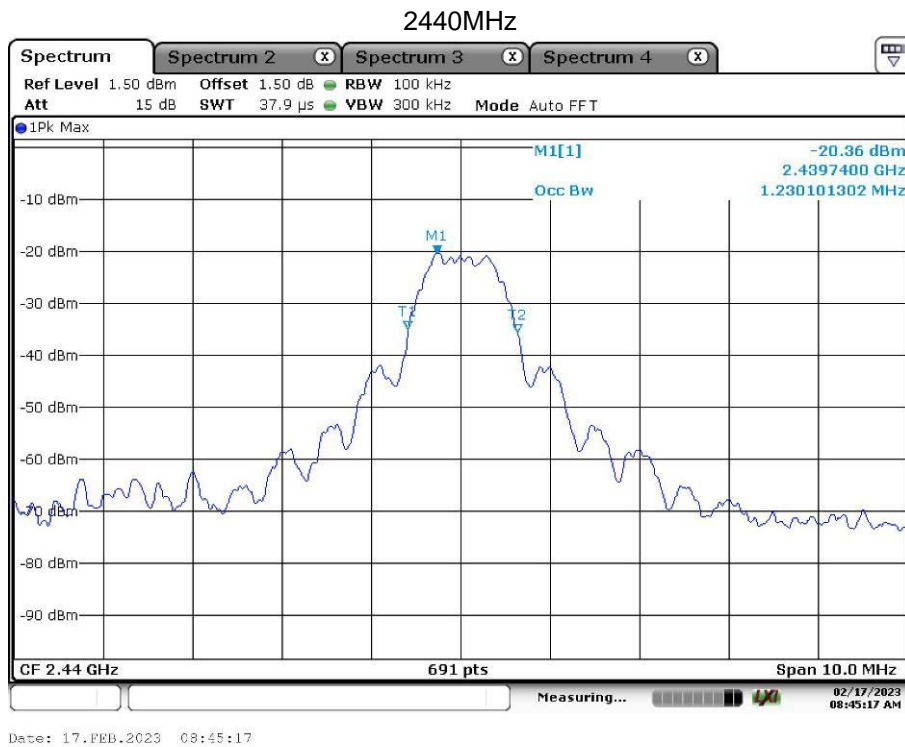
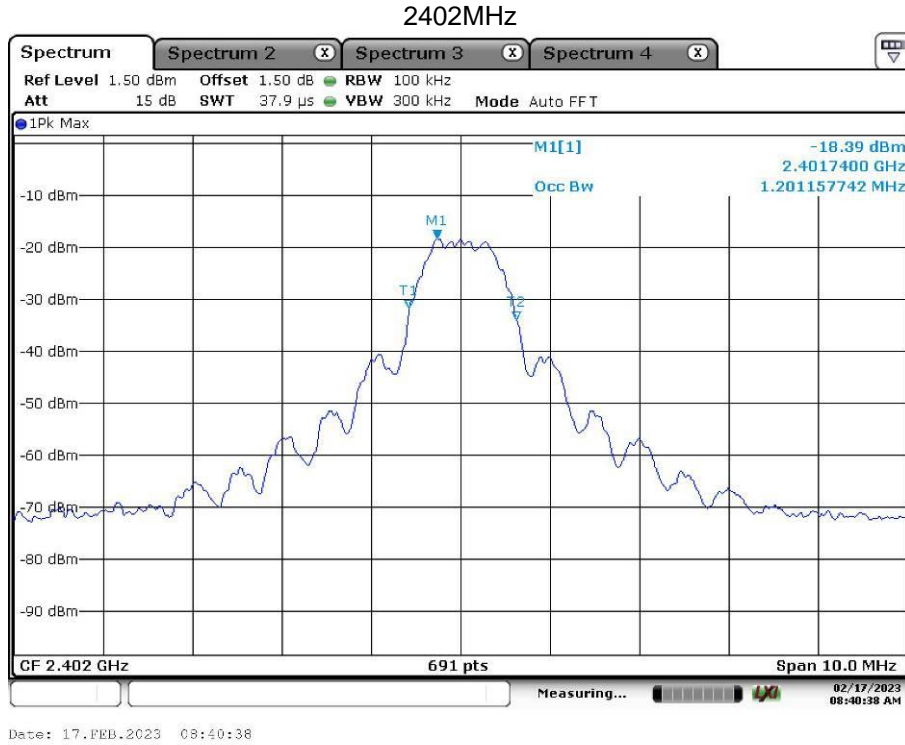
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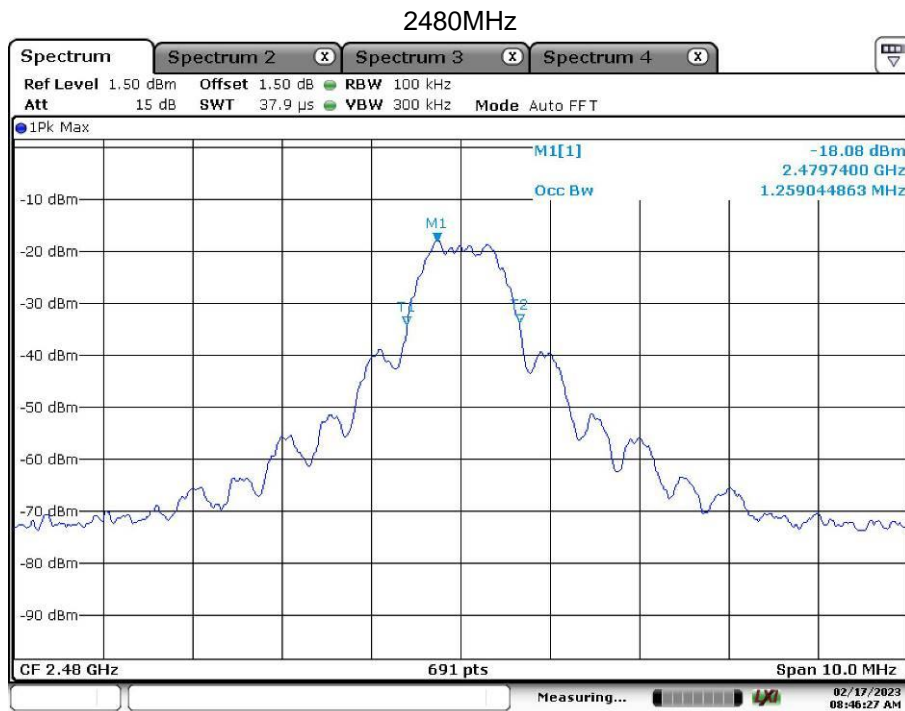
2480MHz



Date: 17.FEB.2023 08:46:01

Appendix A.3: Test Results of 99% Bandwidth



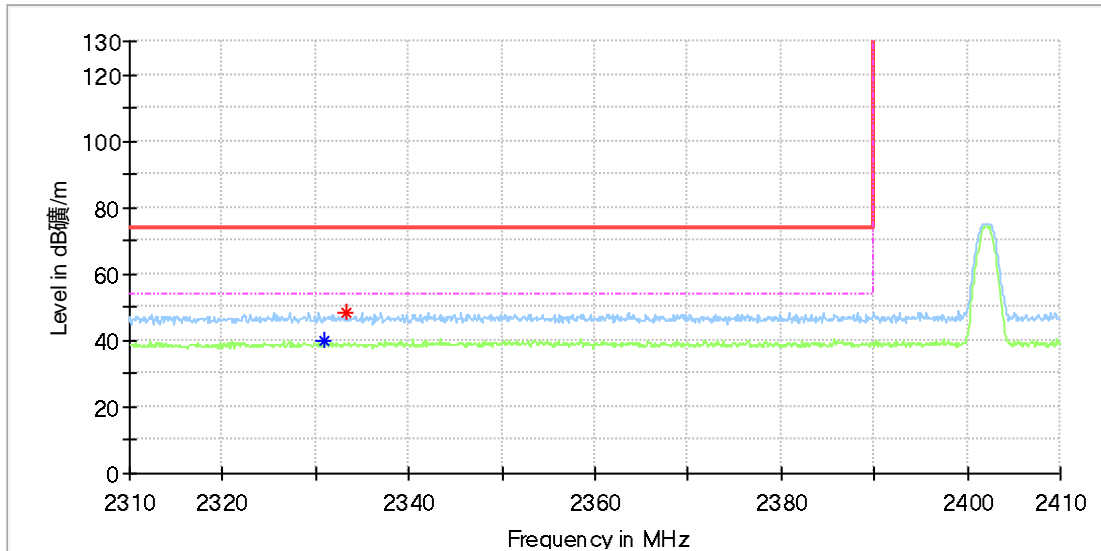


Date: 17.FEB.2023 08:46:27

Appendix A.4: Test Results of Band Edge

EUT Information

EUT Name:	Wireless Dongle
Model:	MD023
Test Mode:	2.4G L CH
Order No/Sample No:	168413778
Test Voltage:	DC 5V
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.249/RSS-210
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

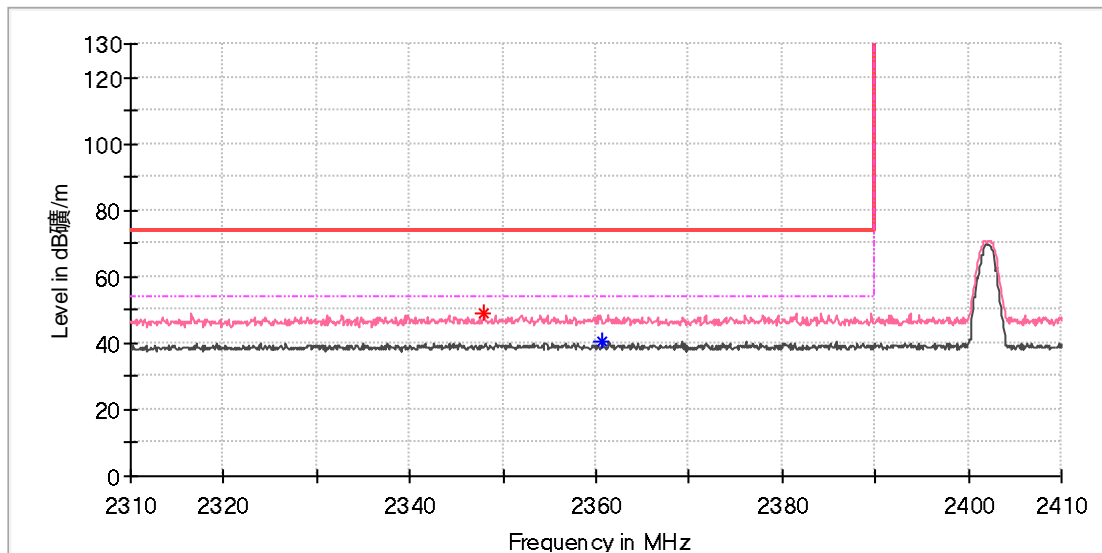


Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2330.800000	---	39.66	54.00	14.34	100.0	H	309.0	6.7
2333.200000	48.46	---	74.00	25.54	100.0	H	0.0	6.7

EUT Information

EUT Name:	Wireless Dongle
Model:	MD023
Test Mode:	2.4G L CH
Order No/Sample No:	168413778
Test Voltage:	DC 5V
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.249/RSS-210
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

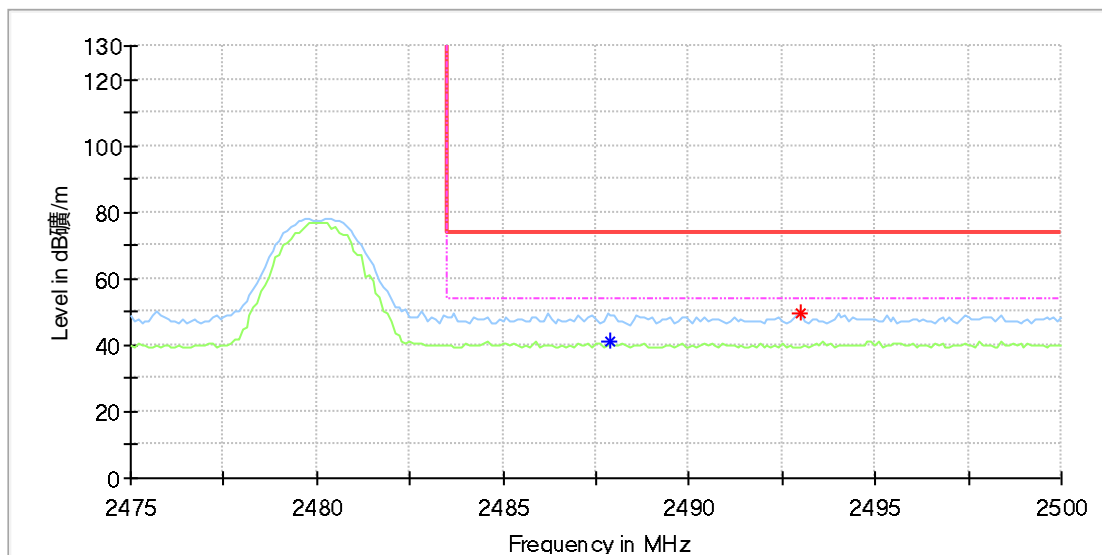


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2348.000000	48.70	---	74.00	25.30	100.0	V	123.0	6.9
2360.700000	---	40.53	54.00	13.47	100.0	V	39.0	6.9

EUT Information

EUT Name:	Wireless Dongle
Model:	MD023
Test Mode:	2.4G H CH
Order No/Sample No:	168413778
Test Voltage:	DC 5V
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.249/RSS-210
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

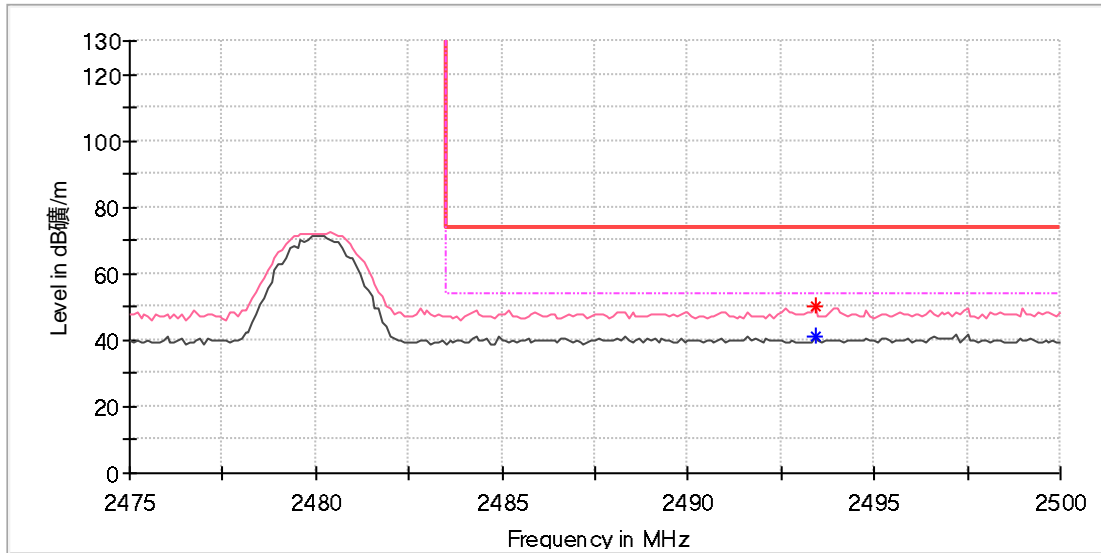


Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2487.900000	---	40.97	54.00	13.03	100.0	H	245.0	7.4
2493.000000	49.40	---	74.00	24.60	100.0	H	13.0	7.4

EUT Information

EUT Name:	Wireless Dongle
Model:	MD023
Test Mode:	2.4G H CH
Order No/Sample No:	168413778
Test Voltage:	DC 5V
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.249/RSS-210
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



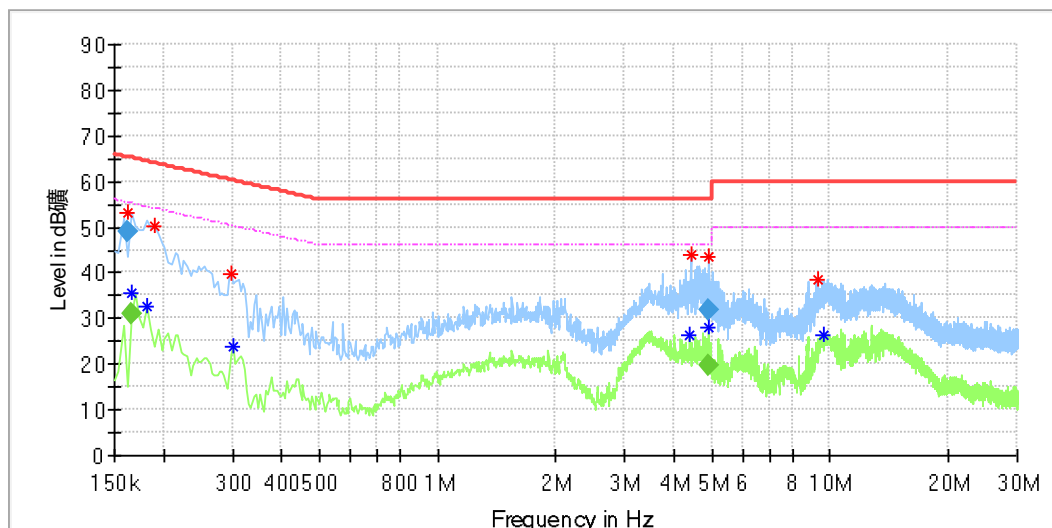
Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2493.400000	---	41.40	54.00	12.60	100.0	V	314.0	7.4
2493.400000	50.48	---	74.00	23.52	100.0	V	314.0	7.4

Appendix A.5: Test Results of Conducted Emission on AC Mains

EUT Information

EUT Name: Wireless Dongle
 Order Number: 168413778
 Model: MD023
 Test Mode: ON
 Test Voltage: AC 120V/60Hz
 Test Standard: FCC Part 15
 Tem./Hum./Pressure: 25.0°C/51.2%/101kPa
 Remark: SR2



Critical Freqs

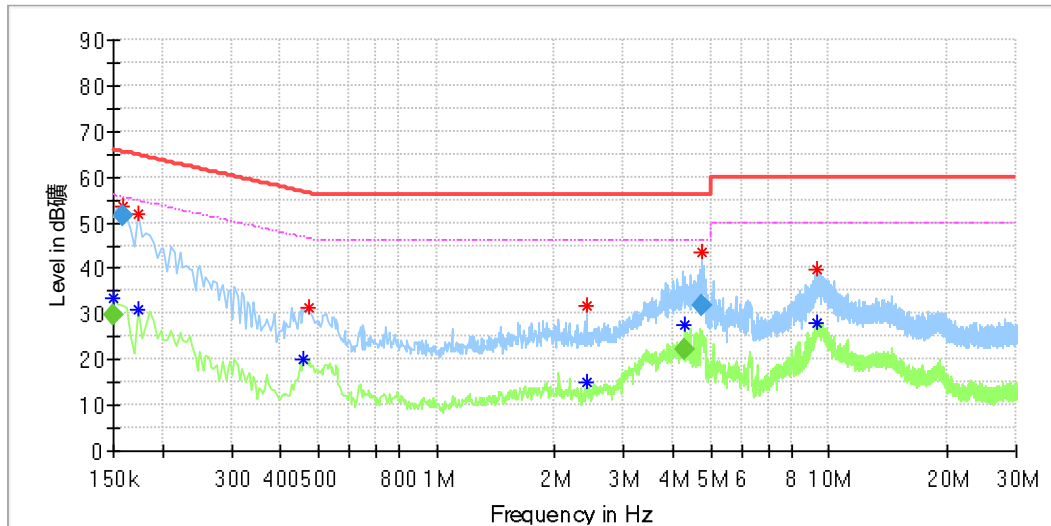
Frequency (MHz)	MaxPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.161500	53.29	---	65.16	11.87	L1	9.9
0.165500	---	35.69	54.96	19.27	L1	9.9
0.182000	---	32.76	54.39	21.63	L1	9.9
0.190000	50.18	---	64.04	13.86	L1	9.9
0.298000	39.92	---	60.30	20.38	L1	9.9
0.302000	---	23.75	50.19	26.44	L1	9.9
4.378000	---	26.21	46.00	19.79	L1	10.2
4.410000	44.02	---	56.00	11.98	L1	10.2
4.925500	---	28.23	46.00	17.77	L1	10.2
4.925500	43.69	---	56.00	12.31	L1	10.2
9.358000	38.45	---	60.00	21.55	L1	10.3
9.590000	---	26.56	50.00	23.44	L1	10.3

Final Result

Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.161500	49.11	---	65.39	16.27	1000.0	9.000	L1	9.9
0.165500	---	30.87	55.18	24.31	1000.0	9.000	L1	9.9
4.925500	---	19.82	46.00	26.18	1000.0	9.000	L1	10.2
4.925500	31.74	---	56.00	24.26	1000.0	9.000	L1	10.2

EUT Information

EUT Name: Wireless Dongle
 Order Number: 168413778
 Model: MD023
 Test Mode: ON
 Test Voltage: AC 120V/60Hz
 Test Standard: FCC Part 15
 Tem./Hum./Pressure: 25.0°C/51.2%/101kPa
 Remark: SR2



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.150000	---	33.29	56.00	22.71	N	9.8
0.158500	53.56	---	65.78	12.22	N	9.8
0.174000	51.71	---	64.77	13.06	N	9.8
0.174000	---	30.83	54.77	23.93	N	9.8
0.458000	---	20.10	46.73	26.63	N	9.8
0.474000	31.57	---	56.44	24.87	N	9.8
2.406000	31.69	---	56.00	24.31	N	9.9
2.422000	---	14.91	46.00	31.09	N	9.9
4.293500	---	27.80	46.00	18.20	N	9.9
4.721500	43.51	---	56.00	12.49	N	9.9
9.290000	39.94	---	60.00	20.06	N	10.0
9.334000	---	28.01	50.00	21.99	N	10.0

Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.150000	---	29.73	56.00	26.27	1000.0	9.000	N	9.8
0.158500	51.49	---	65.54	14.05	1000.0	9.000	N	9.8
4.293500	---	22.23	46.00	23.77	1000.0	9.000	N	9.9
4.721500	31.64	---	56.00	24.36	1000.0	9.000	N	9.9