Appendix B: Test Results

APPENDIX B: TEST RESULTS **1**

APPENDIX B.1: TEST RESULTS OF FIELD STRENGTH OF FUNDAMENTAL & HARMONICS 2

30MHz - 1GHz *2*

1GHz - 18GHz *6*

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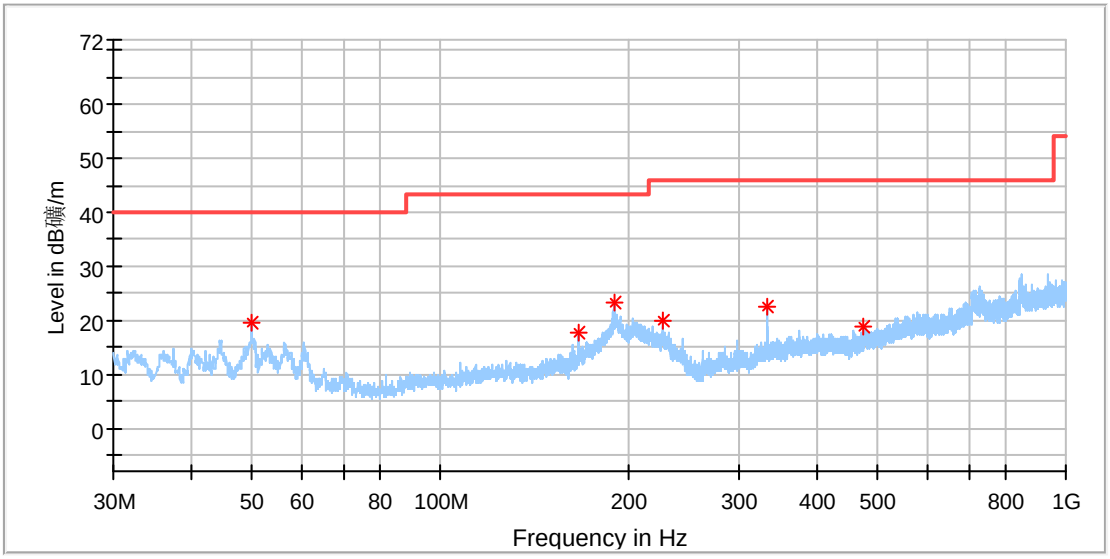
Note: The testing was carried out within frequency range 9kHz to the tenth harmonics. The measurement results below 30MHz and 18GHz to 26.5GHz were greater than 20dB below the limit, so only the radiated spurious emissions from 30MHz to 18GHz were reported.

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

30MHz - 1GHz

EUT Information

EUT Name:	USB C Universal Dongle
Model:	RG96
Test Mode:	2.4G-SRD_2402MHz
Test Voltage::	USB C operated
Remark:	Temp 22 Humi:50%
Test Standard:	FCC 15.249
Tested By:	Alano Qu
Reviewed By:	Terry Yin

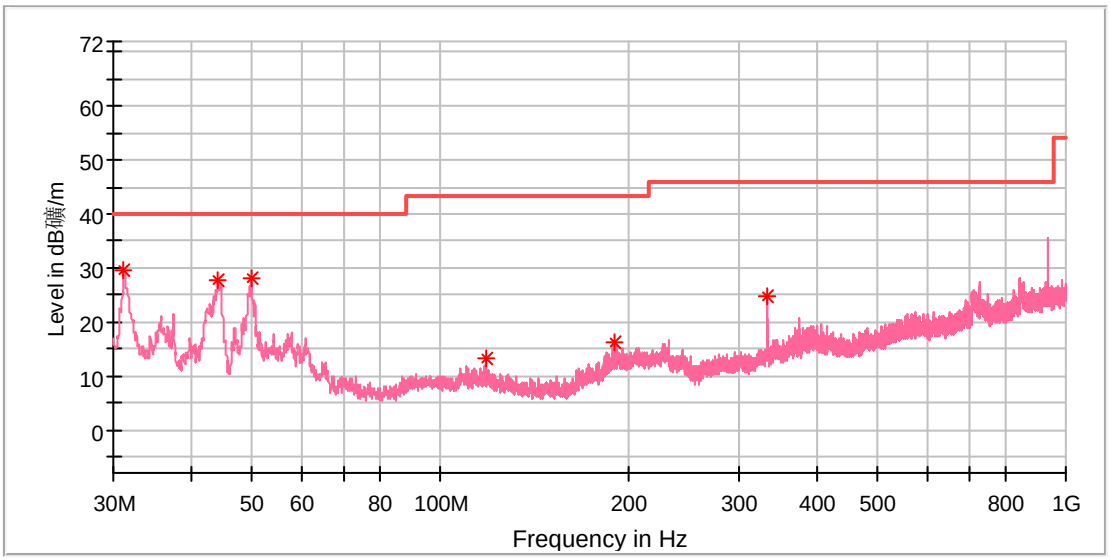


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
49.982000	19.59	40.00	20.41	100.0	H	57.0	-18.6
165.994000	17.53	43.50	25.97	100.0	H	317.0	-21.8
189.371000	23.32	43.50	20.18	100.0	H	300.0	-19.9
227.249500	20.07	46.00	25.93	100.0	H	96.0	-18.5
333.222000	22.40	46.00	23.60	100.0	H	208.0	-15.6
472.999000	18.70	46.00	27.30	100.0	H	188.0	-12.7

EUT Information

EUT Name:	USB C Universal Dongle
Model:	RG96
Test Mode:	2.4G-SRD_2402MHz
Test Voltage::	USB C operated
Remark:	Temp 22 Humi:50%
Test Standard:	FCC 15.249
Tested By:	Alano Qu
Reviewed By:	Terry Yin

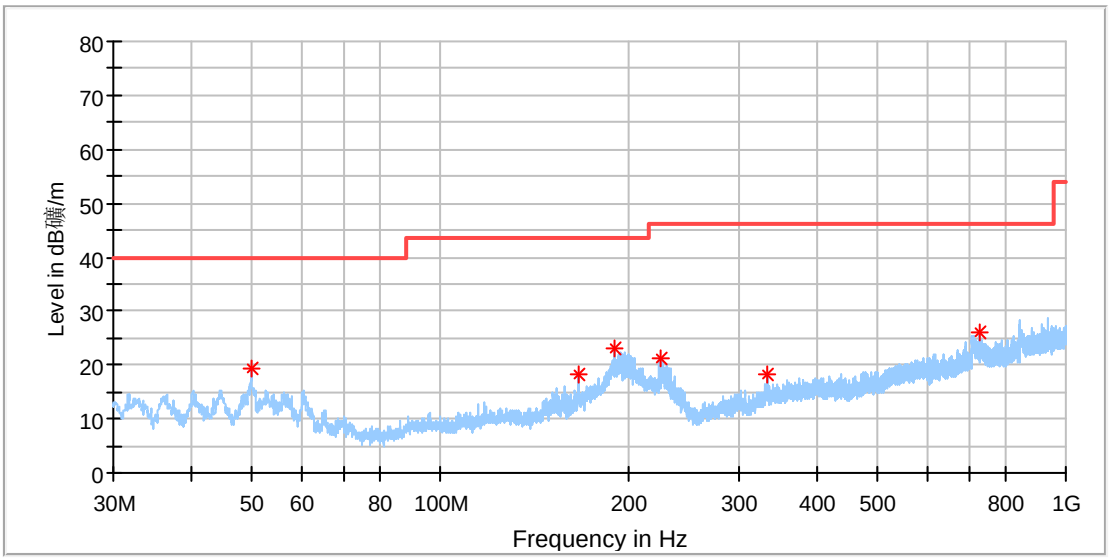


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
31.212500	29.74	40.00	10.26	100.0	V	138.0	-23.1
44.016500	27.60	40.00	12.40	100.0	V	51.0	-19.3
49.982000	28.27	40.00	11.73	100.0	V	0.0	-18.6
118.076000	13.04	43.50	30.46	100.0	V	181.0	-20.7
189.322500	16.12	43.50	27.38	100.0	V	198.0	-19.9
333.173500	24.75	46.00	21.25	100.0	V	198.0	-15.6

EUT Information

EUT Name:	USB C Universal Dongle
Model:	RG96
Test Mode:	2.4G-SRD_2480MHz
Test Voltage::	USB C operated
Remark:	Temp 22 Humi:50%
Test Standard:	FCC 15.249
Tested By:	Alano Qu
Reviewed By:	Terry Yin

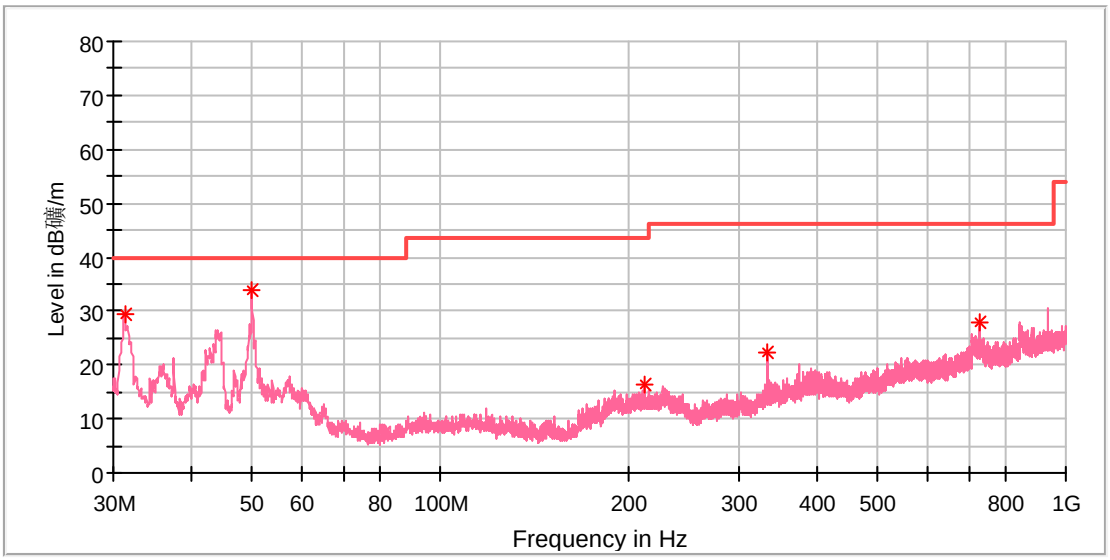


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
49.982000	19.31	40.00	20.70	100.0	H	0.0	-18.6
165.994000	18.40	43.50	25.10	100.0	H	228.0	-21.8
189.516500	23.17	43.50	20.33	100.0	H	295.0	-19.9
224.291000	21.04	46.00	24.96	100.0	H	97.0	-18.7
331.961000	18.21	46.00	27.79	100.0	H	345.0	-15.6
728.885000	25.98	46.00	20.02	100.0	H	89.0	-7.9

EUT Information

EUT Name:	USB C Universal Dongle
Model:	RG96
Test Mode:	2.4G-SRD_2480MHz
Test Voltage::	USB C operated
Remark:	Temp 22 Humi:50%
Test Standard:	FCC 15.249
Tested By:	Alano Qu
Reviewed By:	Terry Yin



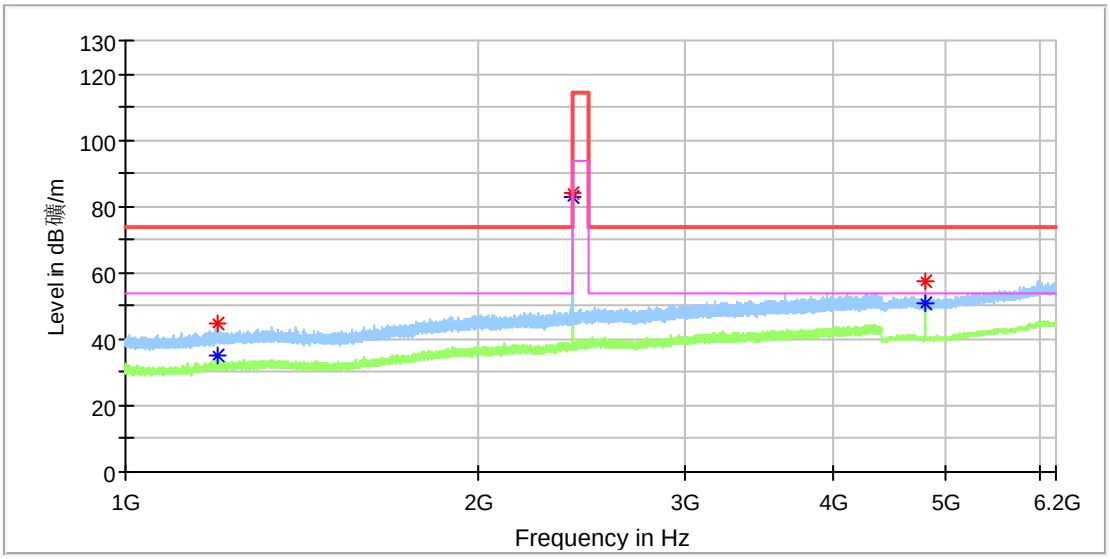
Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
31.261000	29.24	40.00	10.76	100.0	V	194.0	-23.1
49.982000	33.88	40.00	6.12	100.0	V	26.0	-18.6
211.729500	16.42	43.50	27.08	100.0	V	203.0	-19.1
331.815500	22.32	46.00	23.68	100.0	V	203.0	-15.6
728.497000	27.74	46.00	18.26	100.0	V	257.0	-7.9

1GHz - 18GHz
Note: The highest waveform in the figure is 2.4GHz Fundamental.

EUT Information

EUT Name:	USB C Universal Dongle
Model:	RG96
Test Mode:	2.4G-SRD_2402MHz
Test Voltage::	USB C operated
Remark:	Temp 23 Humi:48%
Test Standard:	FCC 15.249
Tested By:	Alano Qu
Reviewed By:	Terry Yin

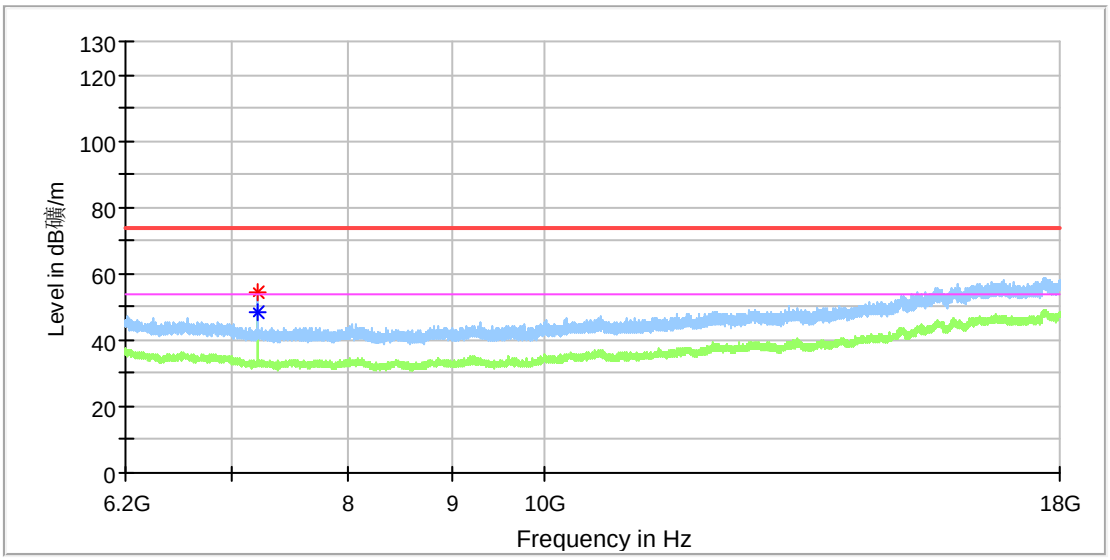


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1198.050000	44.64	---	74.00	29.36	100.0	H	38.0	1.1
1200.600000	---	35.03	54.00	18.97	100.0	H	105.0	1.1
2401.820000	---	83.10	94.00	10.90	100.0	H	121.0	7.0
2402.500000	84.02	---	114.00	29.98	100.0	H	121.0	7.0
4803.000000	57.40	---	74.00	16.60	100.0	H	349.0	11.8
4803.000000	---	50.98	54.00	3.02	100.0	H	349.0	11.8

EUT Information

EUT Name:	USB C Universal Dongle
Model:	RG96
Test Mode:	2.4G-SRD_2402MHz
Test Voltage::	USB C operated
Remark:	Temp 23 Humi:48%
Test Standard:	FCC 15.249
Tested By:	Alano Qu
Reviewed By:	Terry Yin

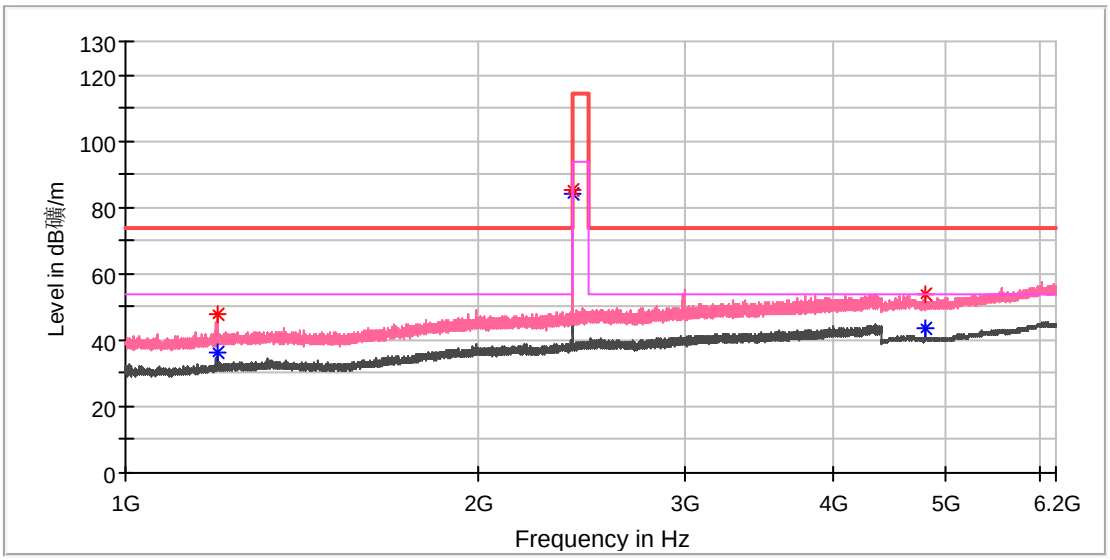


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7204.475000	54.29	74.00	19.71	100.0	H	265.0	8.8
7204.475000	---	54.00	5.37	100.0	H	265.0	8.8

EUT Information

EUT Name:	USB C Universal Dongle
Model:	RG96
Test Mode:	2.4G-SRD_2402MHz
Test Voltage::	USB C operated
Remark:	Temp 23 Humi:48%
Test Standard:	FCC 15.249
Tested By:	Alano Qu
Reviewed By:	Terry Yin

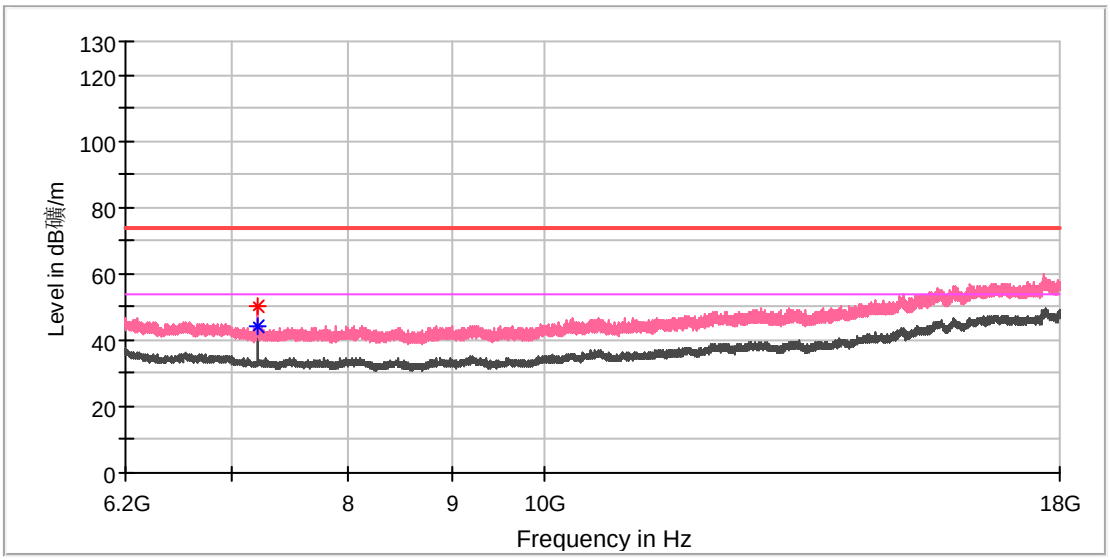


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1197.200000	47.78	---	74.00	26.22	100.0	V	224.0	1.1
1197.200000	---	36.57	54.00	17.43	100.0	V	224.0	1.1
2402.330000	---	83.80	94.00	10.20	100.0	V	74.0	7.0
2402.500000	85.11	---	114.00	28.89	100.0	V	74.0	7.0
4803.500000	53.54	---	74.00	20.46	100.0	V	256.0	11.8
4803.500000	---	43.62	54.00	10.38	100.0	V	256.0	11.8

EUT Information

EUT Name:	USB C Universal Dongle
Model:	RG96
Test Mode:	2.4G-SRD_2402MHz
Test Voltage::	USB C operated
Remark:	Temp 23 Humi:48%
Test Standard:	FCC 15.249
Tested By:	Alano Qu
Reviewed By:	Terry Yin

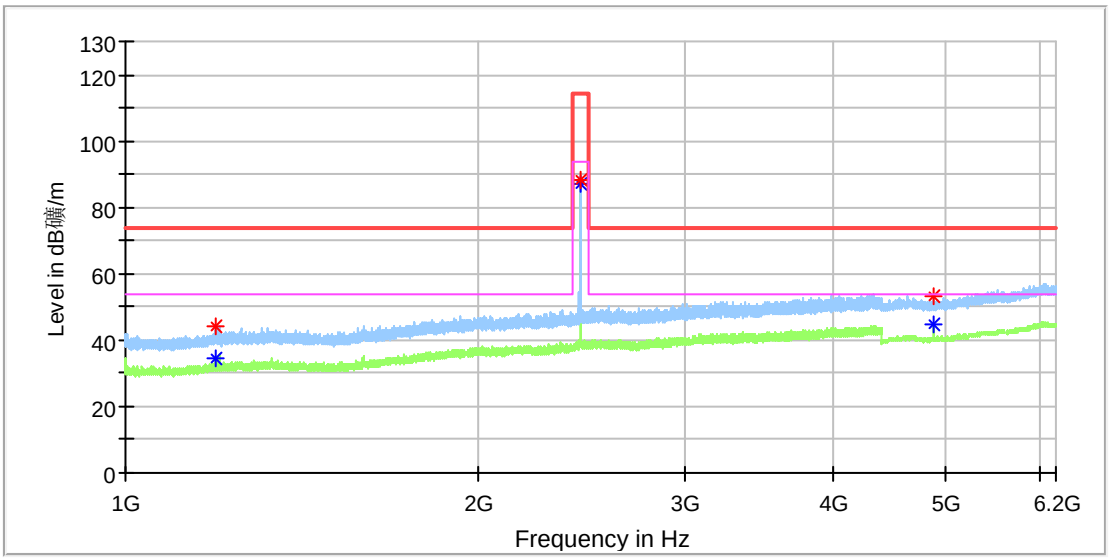


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7204.475000	---	54.00	9.96	100.0	V	167.0	8.8
7204.966667	50.36	74.00	23.64	100.0	V	125.0	8.8

EUT Information

EUT Name:	USB C Universal Dongle
Model:	RG96
Test Mode:	2.4G-SRD_2440MHz
Test Voltage::	USB C operated
Remark:	Temp 23 Humi:48%
Test Standard:	FCC 15.249
Tested By:	Alano Qu
Reviewed By:	Terry Yin

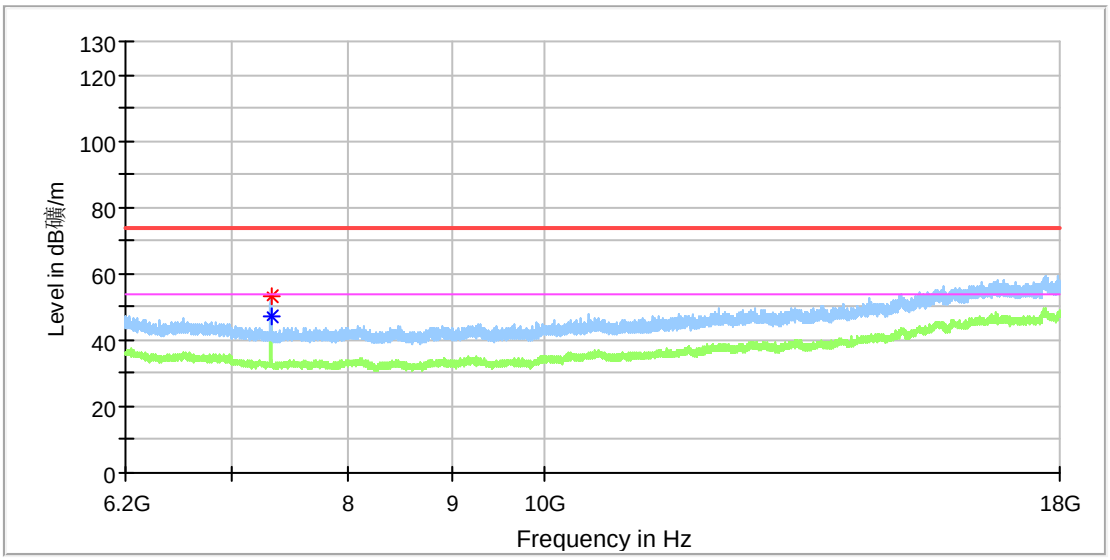


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1194.480000	44.42	---	74.00	29.58	100.0	H	46.0	1.1
1194.480000	---	34.59	54.00	19.41	100.0	H	46.0	1.1
2439.560000	88.43	---	114.00	25.57	100.0	H	297.0	7.4
2439.900000	---	87.00	94.00	7.00	100.0	H	297.0	7.4
4879.500000	---	44.60	54.00	9.40	100.0	H	348.0	11.8
4880.000000	53.39	---	74.00	20.61	100.0	H	359.0	11.8

EUT Information

EUT Name:	USB C Universal Dongle
Model:	RG96
Test Mode:	2.4G-SRD_2440MHz
Test Voltage::	USB C operated
Remark:	Temp 23 Humi:48%
Test Standard:	FCC 15.249
Tested By:	Alano Qu
Reviewed By:	Terry Yin

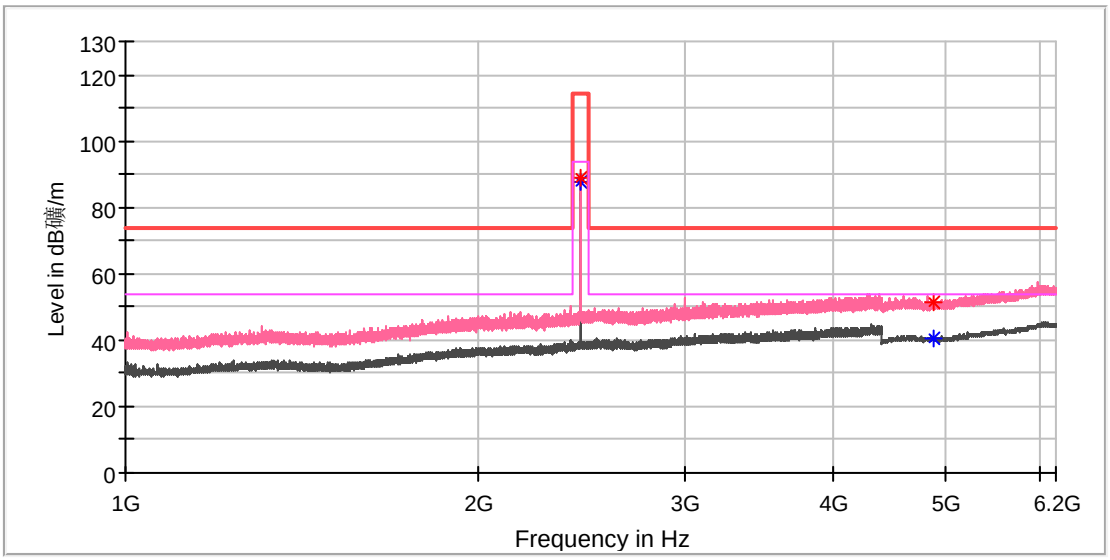


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7318.541667	53.10	74.00	20.90	100.0	H	274.0	8.2
7318.541667	---	54.00	6.85	100.0	H	274.0	8.2

EUT Information

EUT Name:	USB C Universal Dongle
Model:	RG96
Test Mode:	2.4G-SRD_2440MHz
Test Voltage::	USB C operated
Remark:	Temp 23 Humi:48%
Test Standard:	FCC 15.249
Tested By:	Alano Qu
Reviewed By:	Terry Yin

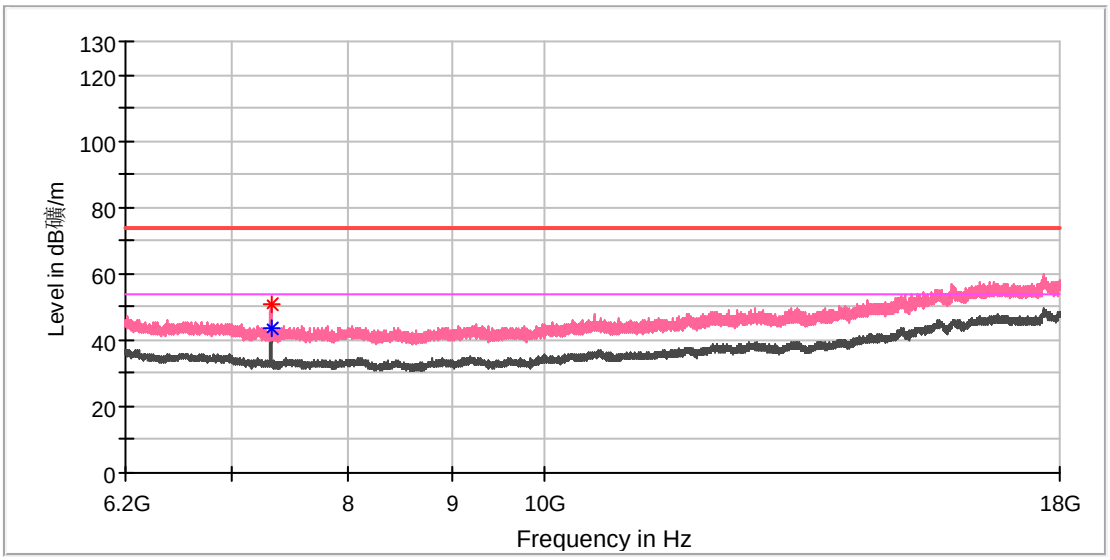


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2439.900000	---	87.64	94.00	6.36	100.0	V	88.0	7.4
2440.580000	89.16	---	114.00	24.84	100.0	V	88.0	7.4
4879.500000	---	40.73	54.00	13.27	100.0	V	140.0	11.8
4881.000000	51.16	---	74.00	22.84	100.0	V	348.0	11.8

EUT Information

EUT Name:	USB C Universal Dongle
Model:	RG96
Test Mode:	2.4G-SRD_2440MHz
Test Voltage::	USB C operated
Remark:	Temp 23 Humi:48%
Test Standard:	FCC 15.249
Tested By:	Alano Qu
Reviewed By:	Terry Yin

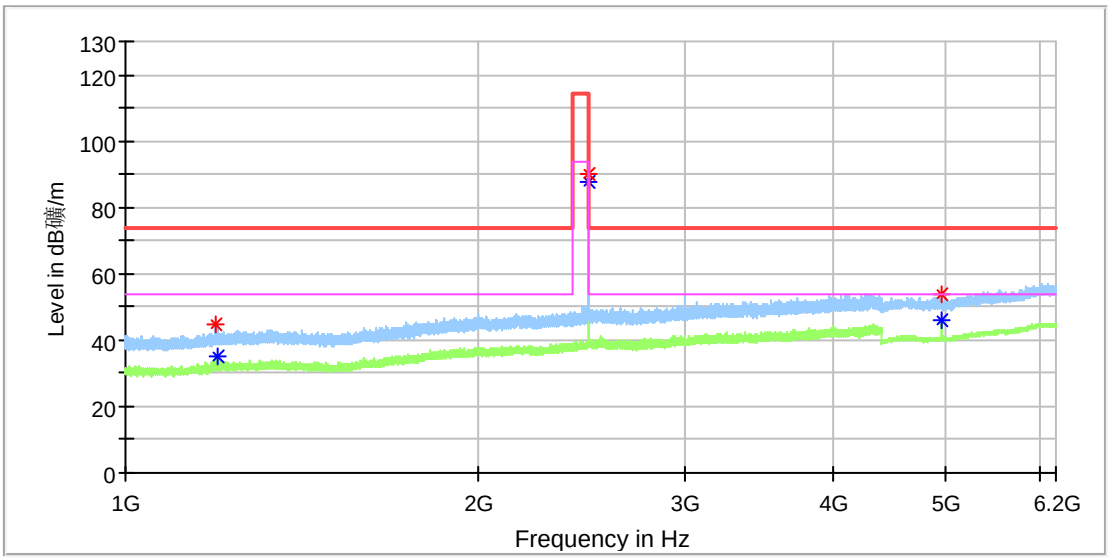


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7318.541667	50.81	74.00	23.19	100.0	V	197.0	8.2
7318.541667	---	54.00	10.65	100.0	V	197.0	8.2

EUT Information

EUT Name:	USB C Universal Dongle
Model:	RG96
Test Mode:	2.4G-SRD_2480MHz
Test Voltage::	USB C operated
Remark:	Temp 23 Humi:48%
Test Standard:	FCC 15.249
Tested By:	Alano Qu
Reviewed By:	Terry Yin

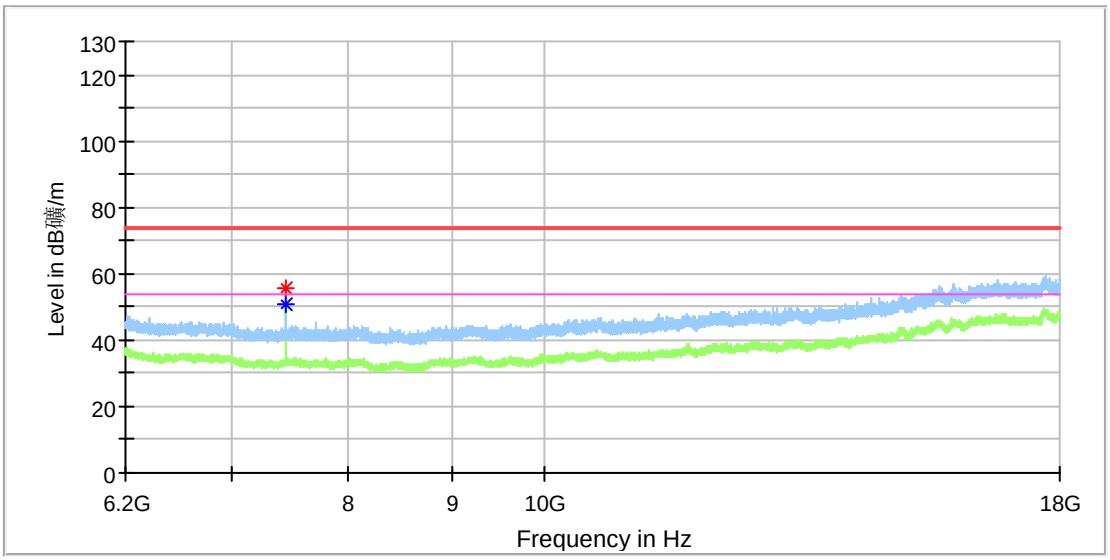


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1193.970000	44.98	---	74.00	29.02	100.0	H	339.0	1.1
1198.050000	---	35.16	54.00	18.84	100.0	H	269.0	1.1
2479.340000	90.11	---	114.00	23.89	100.0	H	71.0	7.4
2480.020000	---	87.87	94.00	6.13	100.0	H	71.0	7.4
4960.000000	---	45.81	54.00	8.19	100.0	H	232.0	11.8
4961.000000	53.86	---	74.00	20.14	100.0	H	232.0	11.8

EUT Information

EUT Name:	USB C Universal Dongle
Model:	RG96
Test Mode:	2.4G-SRD_2480MHz
Test Voltage::	USB C operated
Remark:	Temp 23 Humi:48%
Test Standard:	FCC 15.249
Tested By:	Alano Qu
Reviewed By:	Terry Yin

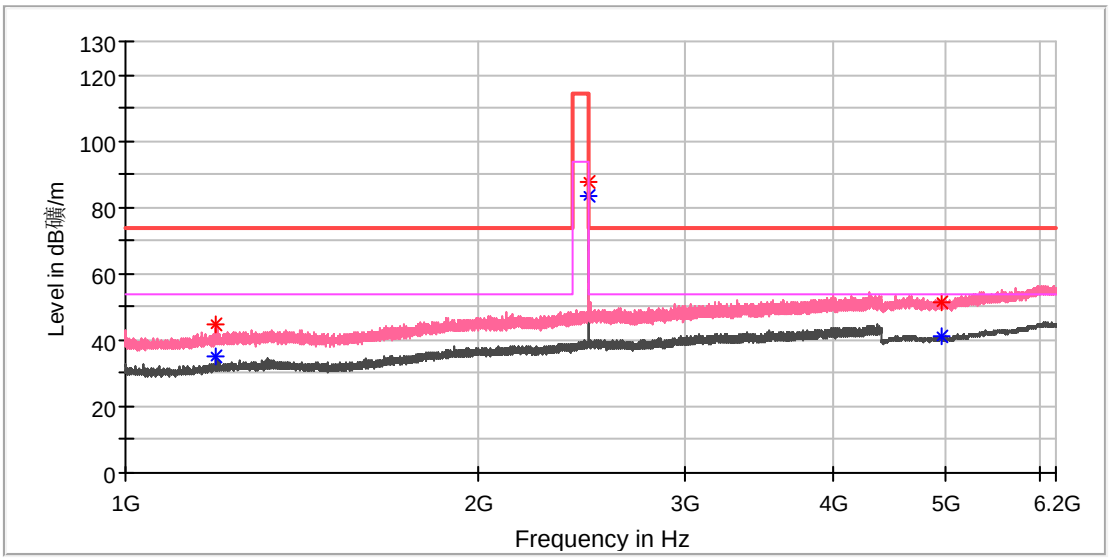


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7439.983333	55.45	74.00	18.55	100.0	H	89.0	8.4
7439.983333	---	54.00	3.15	100.0	H	89.0	8.4

EUT Information

EUT Name:	USB C Universal Dongle
Model:	RG96
Test Mode:	2.4G-SRD_2480MHz
Test Voltage::	USB C operated
Remark:	Temp 23 Humi:48%
Test Standard:	FCC 15.249
Tested By:	Alano Qu
Reviewed By:	Terry Yin

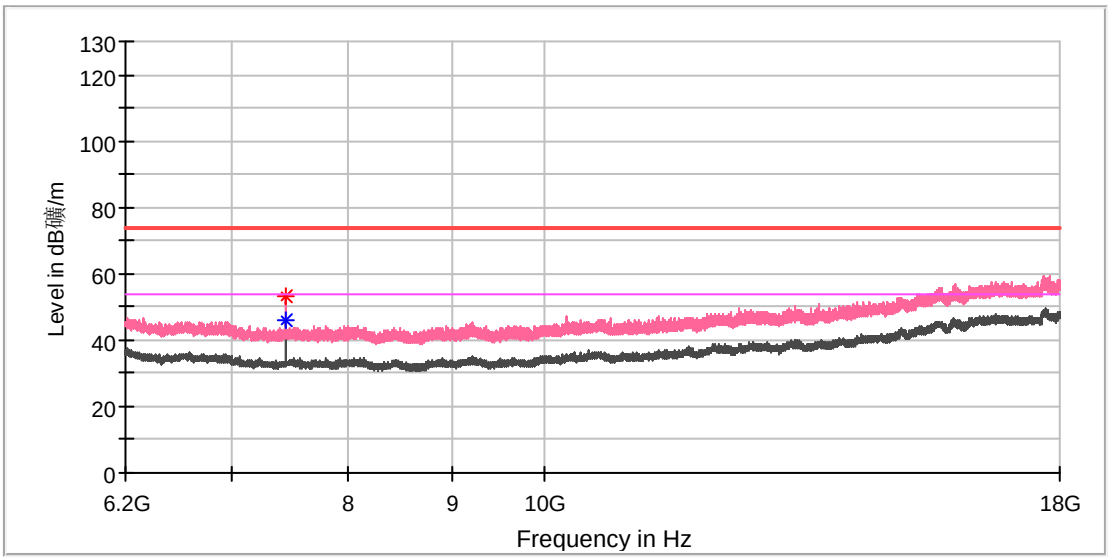


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1194.480000	45.03	---	74.00	28.97	100.0	V	224.0	1.1
1194.480000	---	35.21	54.00	18.79	100.0	V	224.0	1.1
2479.340000	87.95	---	114.00	26.05	100.0	V	122.0	7.4
2480.020000	---	83.25	94.00	10.75	100.0	V	12.0	7.4
4958.500000	---	41.11	54.00	12.89	100.0	V	322.0	11.8
4960.500000	51.63	---	74.00	22.37	100.0	V	155.0	11.8

EUT Information

EUT Name:	USB C Universal Dongle
Model:	RG96
Test Mode:	2.4G-SRD_2480MHz
Test Voltage::	USB C operated
Remark:	Temp 23 Humi:48%
Test Standard:	FCC 15.249
Tested By:	Alano Qu
Reviewed By:	Terry Yin

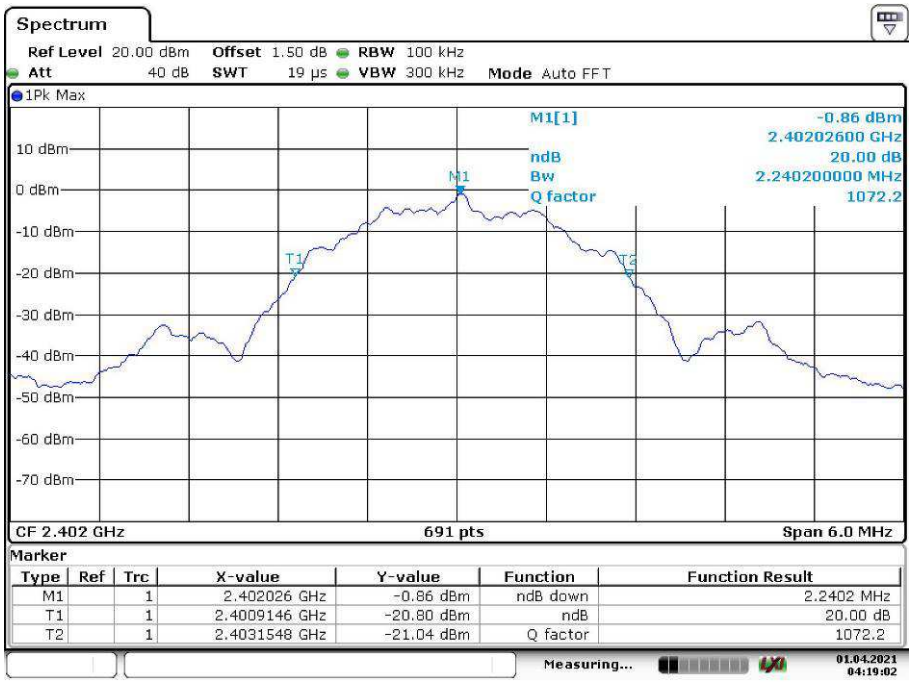


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7441.458333	52.92	74.00	21.08	100.0	V	183.0	8.4
7441.458333	---	54.00	7.96	100.0	V	183.0	8.4

Appendix B.2: Test Results of 20dB Bandwidth

2402MHz



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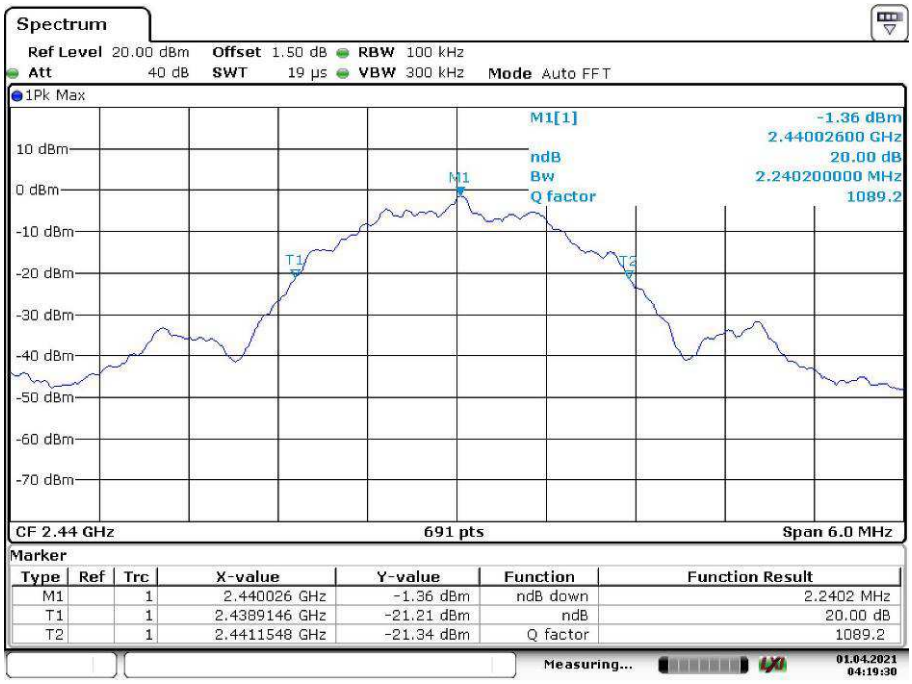
2440MHz



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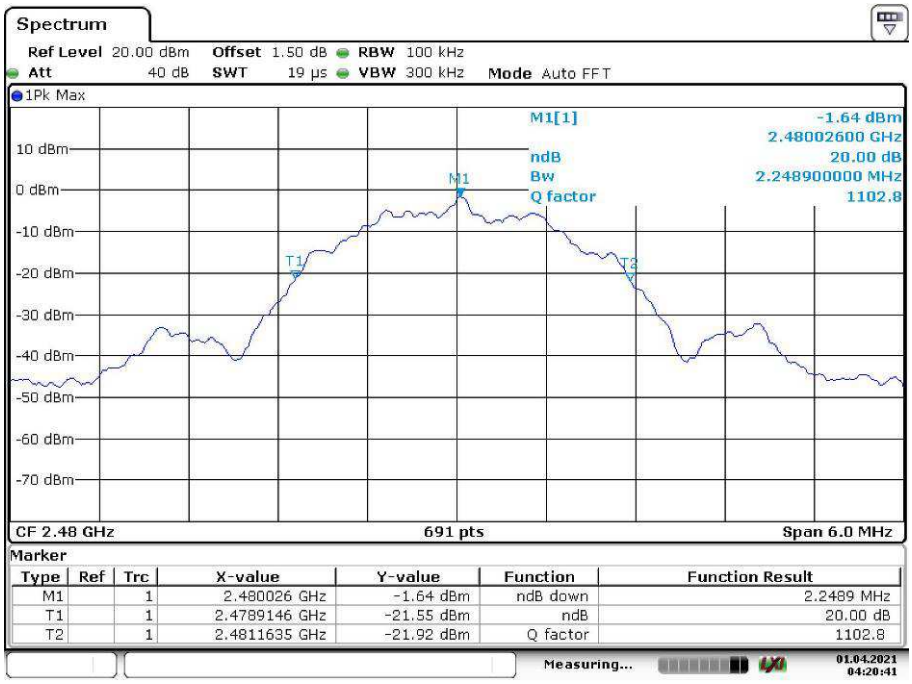
2480MHz



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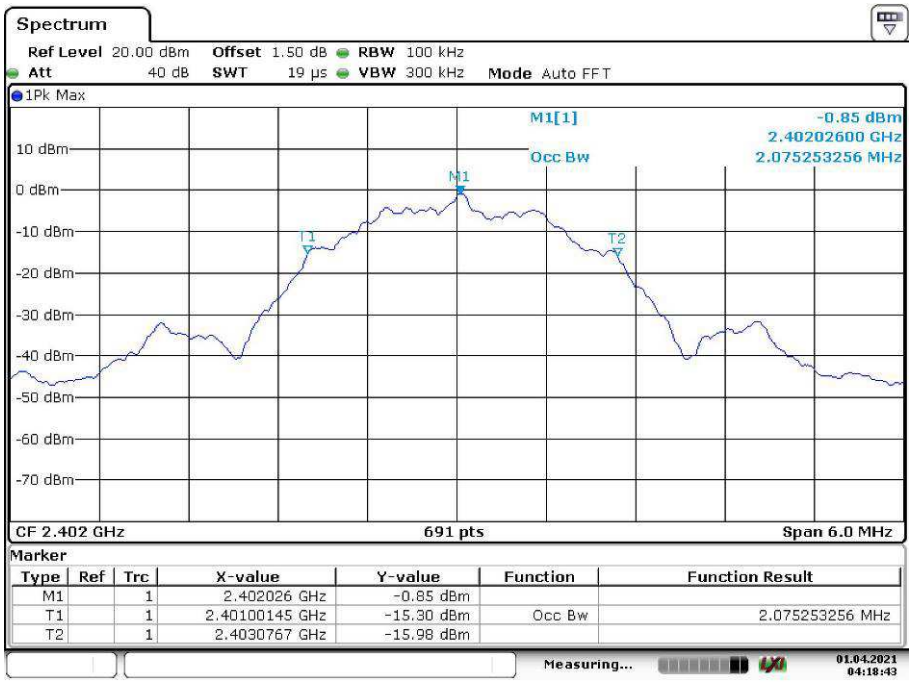
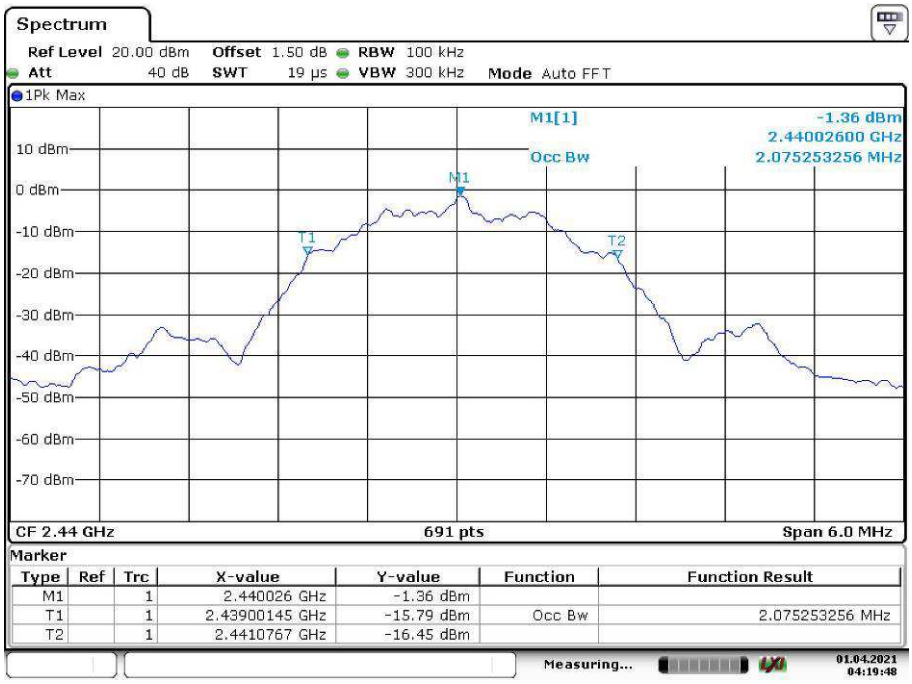
Appendix B.3: Test Results of 99% Bandwidth

2402MHz



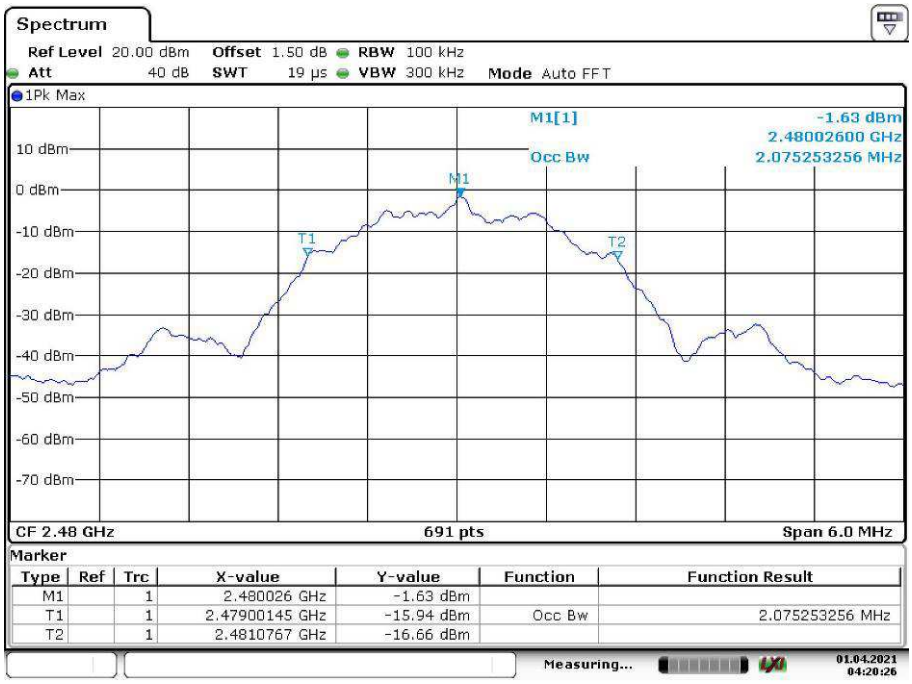
Date: 1.APR.2021 04:18:43

2440MHz



Date: 1.APR.2021 04:19:48

2480MHz

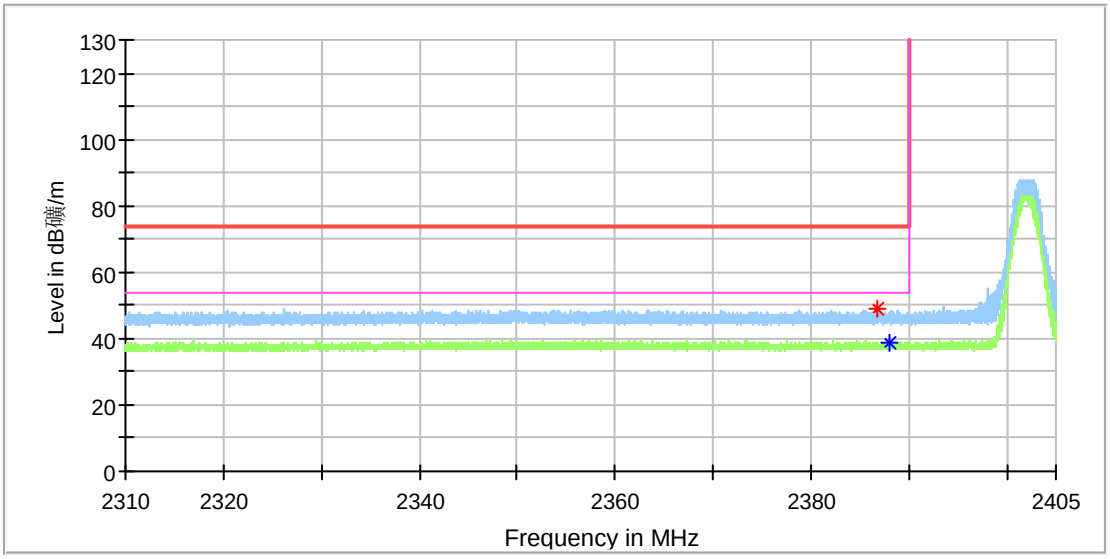


Date: 1.APR.2021 04:20:26

Appendix B.4: Test Results of Band Edge

EUT Information

EUT Name:	USB C Universal Dongle
Model:	RG96
Test Mode:	2.4G-SRD_2402MHz
Test Voltage::	USB C operated
Remark:	Temp 23 Humi:48%
Test Standard:	FCC 15.249
Tested By:	Alano Qu
Reviewed By:	Terry Yin

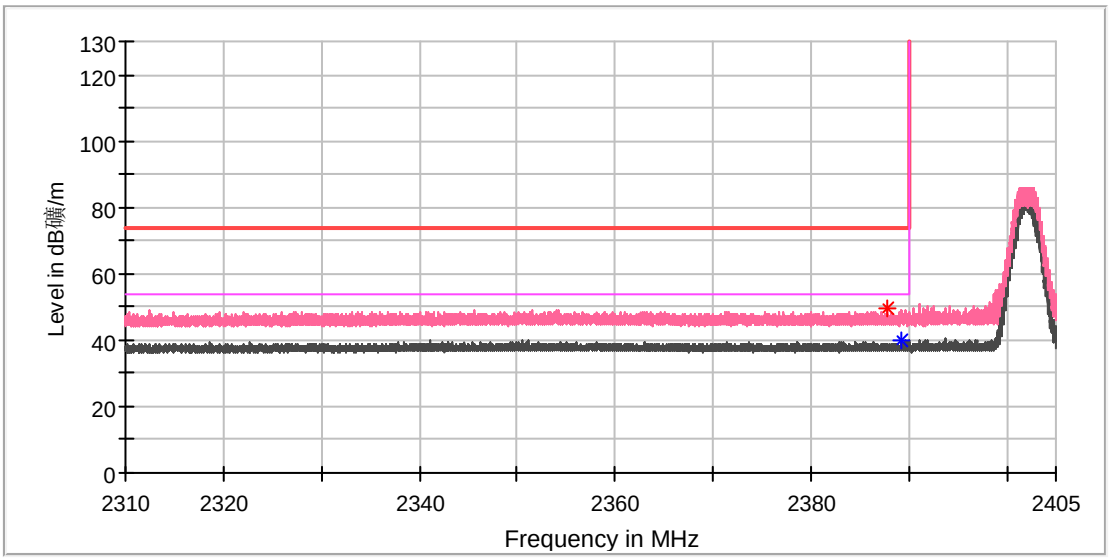


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2386.707750	49.11	---	74.00	24.89	100.0	H	245.0	7.0
2387.904750	---	38.92	54.00	15.08	100.0	H	300.0	7.0

EUT Information

EUT Name:	USB C Universal Dongle
Model:	RG96
Test Mode:	2.4G-SRD_2402MHz
Test Voltage::	USB C operated
Remark:	Temp 23 Humi:48%
Test Standard:	FCC 15.249
Tested By:	Alano Qu
Reviewed By:	Terry Yin

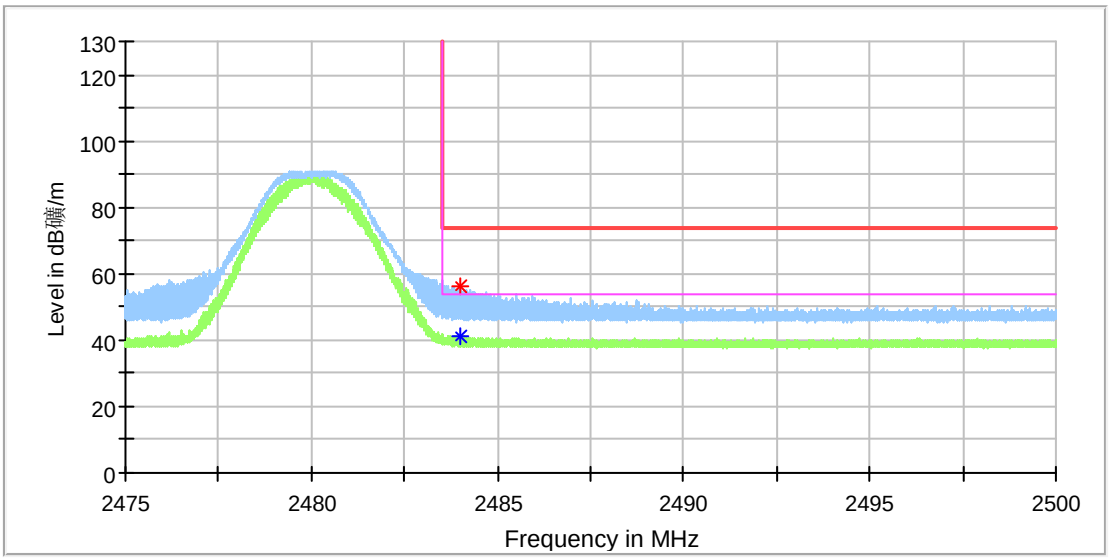


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2387.876250	49.30	---	74.00	24.70	100.0	V	237.0	7.0
2389.173000	---	39.89	54.00	14.11	100.0	V	237.0	7.0

EUT Information

EUT Name:	USB C Universal Dongle
Model:	RG96
Test Mode:	2.4G-SRD_2480MHz
Test Voltage::	USB C operated
Remark:	Temp 23 Humi:48%
Test Standard:	FCC 15.249
Tested By:	Alano Qu
Reviewed By:	Terry Yin

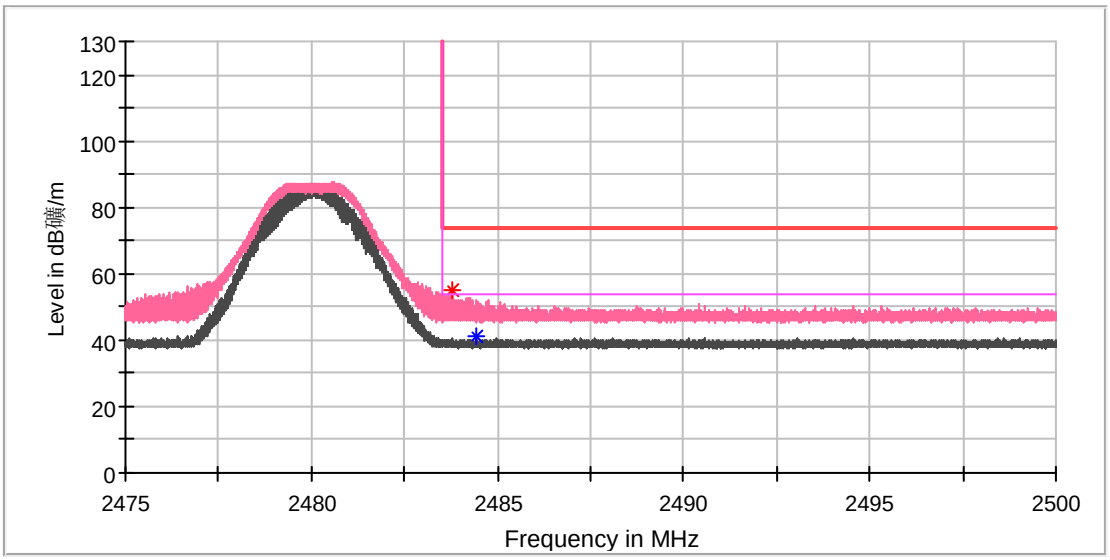


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2484.021250	---	40.89	54.00	13.11	100.0	H	318.0	7.4
2484.021250	55.95	---	74.00	18.05	100.0	H	318.0	7.4

EUT Information

EUT Name:	USB C Universal Dongle
Model:	RG96
Test Mode:	2.4G-SRD_2480MHz
Test Voltage::	USB C operated
Remark:	Temp 23 Humi:48%
Test Standard:	FCC 15.249
Tested By:	Alano Qu
Reviewed By:	Terry Yin



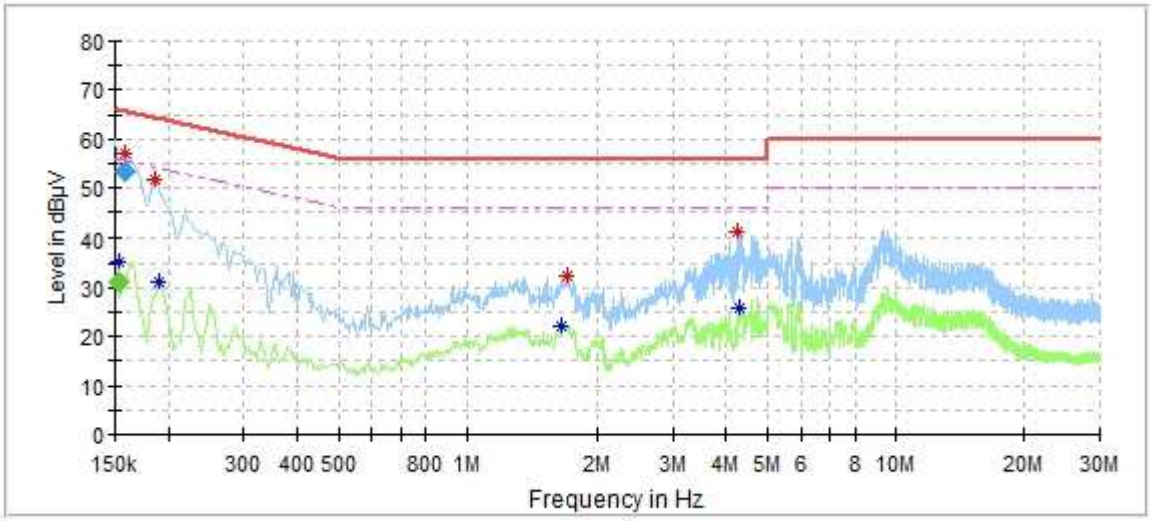
Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2483.768750	54.90	---	74.00	19.10	100.0	V	26.0	7.4
2484.403750	---	41.17	54.00	12.83	100.0	V	117.0	7.4

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

EUT Information

EUT Name:	USB C Universal Dongle
Order No.:	168308028
Model:	RG96
Test Mode:	Normal operation mode
Test Voltage:	120Vac, 60Hz
Test By:	Jianhua Lu
Review By:	Gary Chen
Remark:	SR1



Critical_Freqs

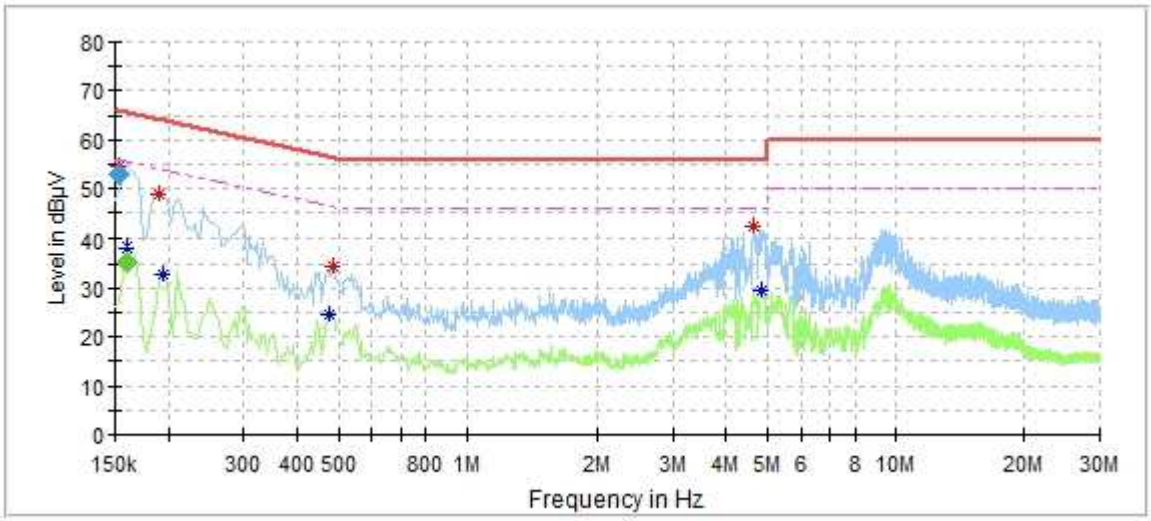
Frequency (MHz)	MaxPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.152500	---	35.13	55.16	20.02	L1	10
0.158000	56.85	---	65.36	8.51	L1	10
0.186000	51.71	---	64.21	12.51	L1	10
0.190000	---	31.20	54.04	22.84	L1	10
1.652000	---	22.05	46.00	23.95	L1	10
1.692000	32.36	---	56.00	23.64	L1	10
4.244000	41.06	---	56.00	14.94	L1	10
4.300000	---	25.64	46.00	20.36	L1	10

Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.152500	---	31.25	55.86	24.62	200.0	9.000	L1	10
0.158000	53.15	---	65.57	12.42	200.0	9.000	L1	10

EUT Information

EUT Name:	USB C Universal Dongle
Order No.:	168308028
Model:	RG96
Test Mode:	Normal operation mode
Test Voltage:	120Vac, 60Hz
Test By:	Jianhua Lu
Review By:	Gary Chen
Remark:	SR1



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.154000	54.48	---	65.57	11.09	N	10
0.160500	---	37.97	55.16	17.19	N	10
0.190000	48.62	---	64.04	15.42	N	10
0.194000	---	32.98	53.86	20.88	N	10
0.478000	---	24.69	46.37	21.68	N	10
0.486000	34.36	---	56.24	21.88	N	10
4.632000	42.42	---	56.00	13.58	N	10
4.848000	---	29.43	46.00	16.57	N	10

Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.154000	53.06	---	65.78	12.72	200.0	9.000	N	10
0.160500	---	35.33	55.44	20.11	200.0	9.000	N	10