

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	0.656	2401.684	2402.340	0.5	PASS
		2440	0.656	2439.672	2440.328	0.5	PASS
		2480	0.656	2479.676	2480.332	0.5	PASS
BLE_2M	Ant1	2402	1.072	2401.484	2402.556	0.5	PASS
		2440	1.092	2439.468	2440.560	0.5	PASS
		2480	1.128	2479.464	2480.592	0.5	PASS

Test Graphs





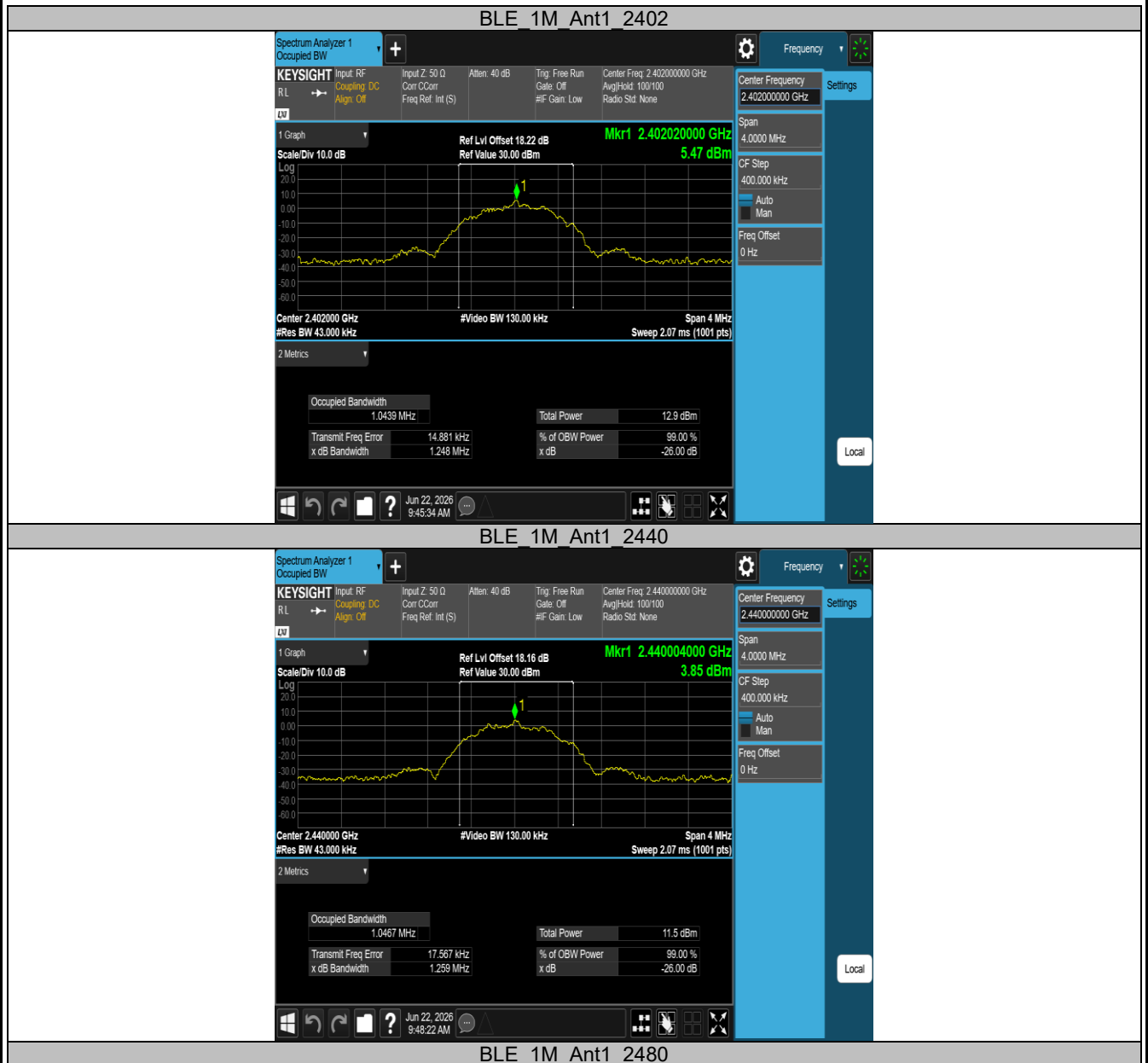


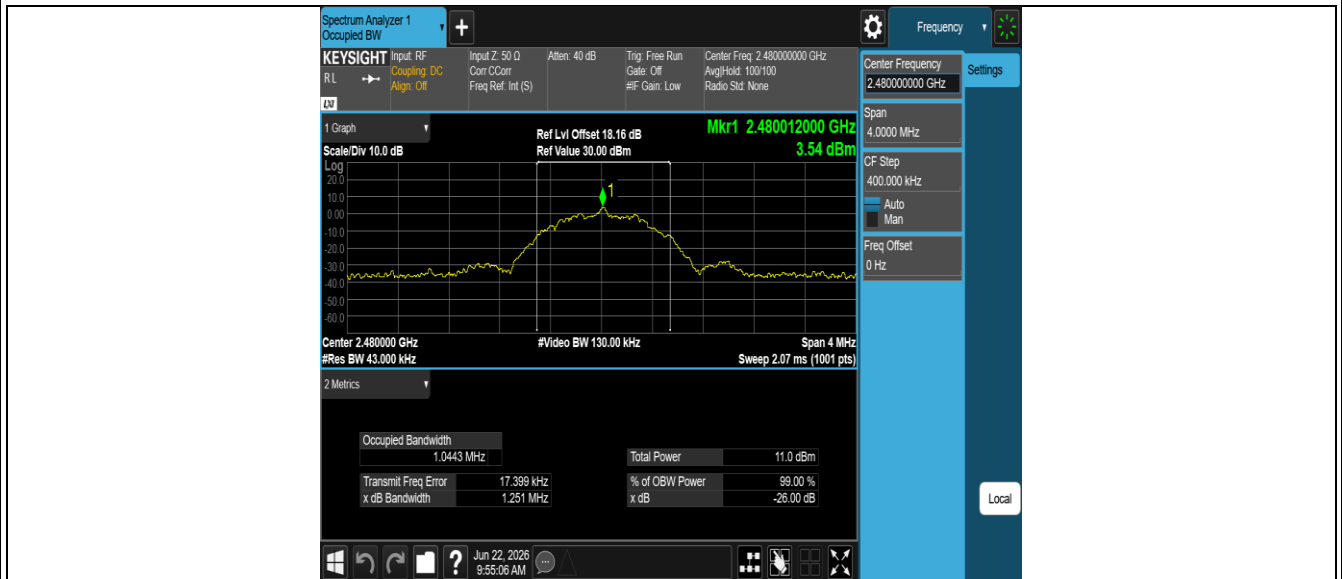
Appendix A.2: Test Results of 99% Bandwidth

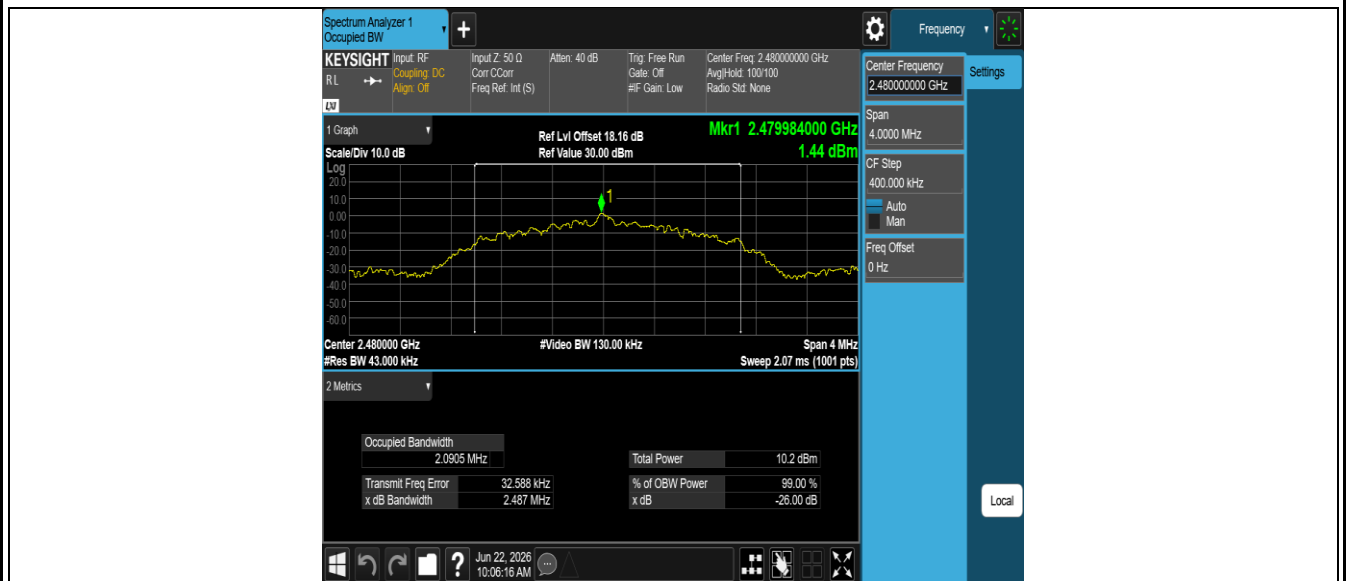
Test Result

TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0439	2401.4929	2402.5368	---	---
		2440	1.0467	2439.4942	2440.5409	---	---
		2480	1.0443	2479.4953	2480.5396	---	---
BLE_2M	Ant1	2402	2.0794	2401.0055	2403.0849	---	---
		2440	2.0837	2438.9999	2441.0836	---	---
		2480	2.0905	2478.9873	2481.0778	---	---

Test Graphs





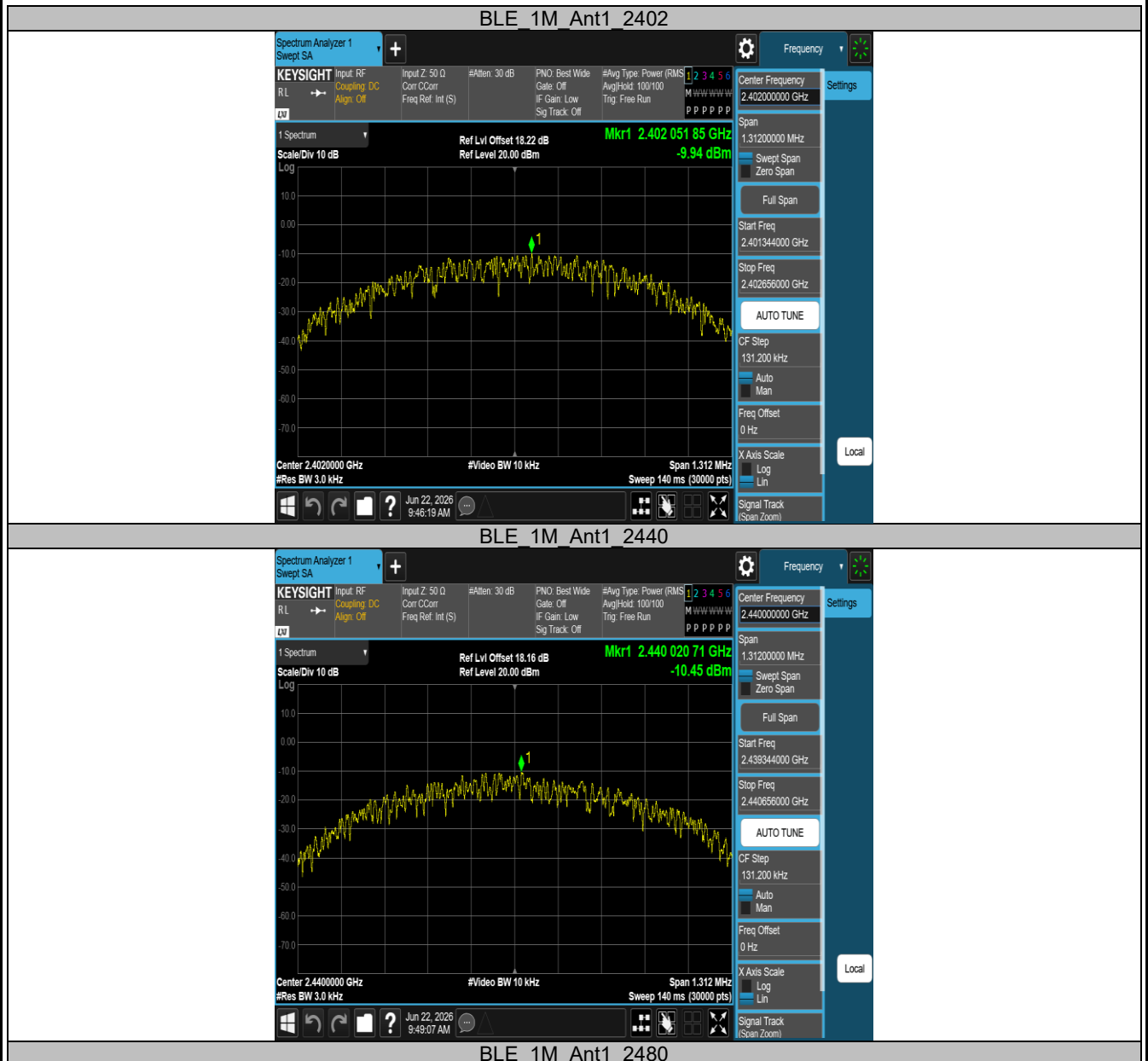


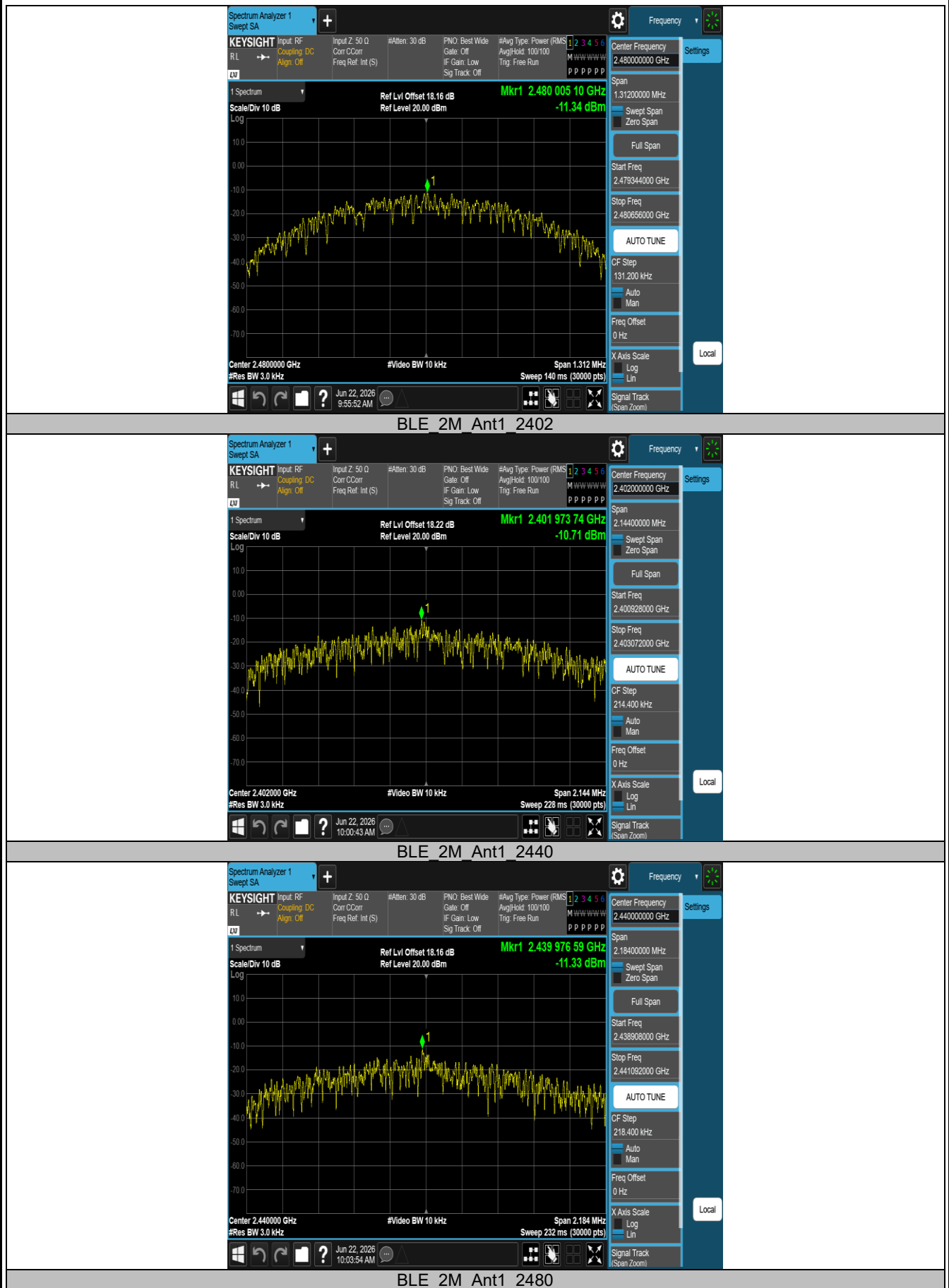
Appendix A.3: Test Results of Conducted Power Spectral Density

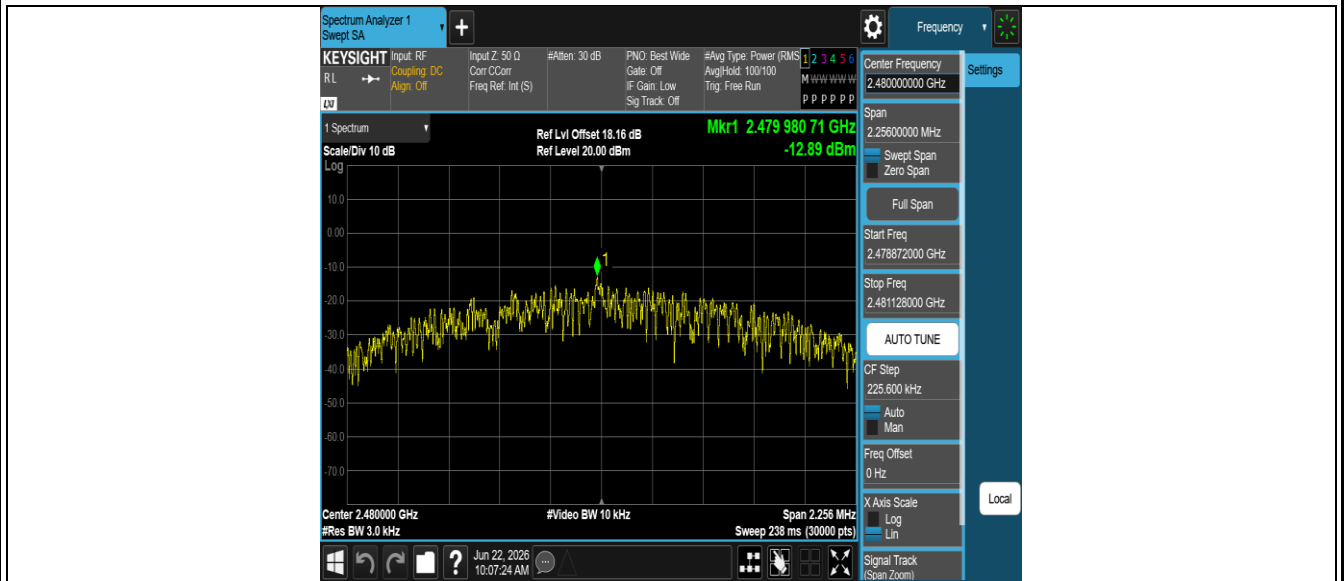
Test Result

TestMode	Antenna	Channel	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-9.94	≤8.00	PASS
		2440	-10.45	≤8.00	PASS
		2480	-11.34	≤8.00	PASS
BLE_2M	Ant1	2402	-10.71	≤8.00	PASS
		2440	-11.33	≤8.00	PASS
		2480	-12.89	≤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	6.27	-42.33	≤-13.73	PASS
		High	2480	4.29	-43.19	≤-15.71	PASS
BLE_2M	Ant1	Low	2402	6.08	-27.30	≤-13.92	PASS
		High	2480	4.22	-41.90	≤-15.78	PASS

Test Graphs





BLE 2M Ant1 High 2480

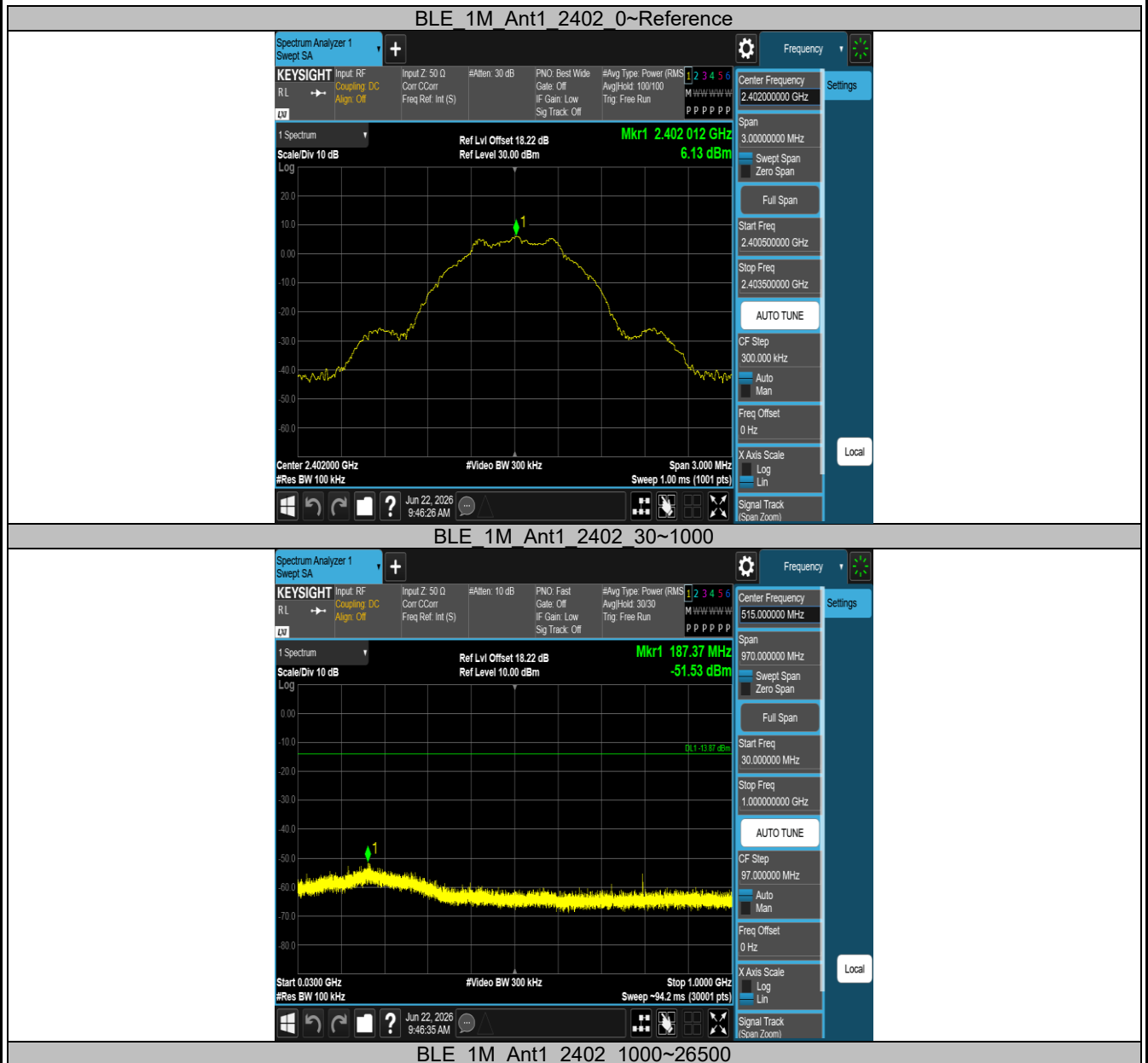


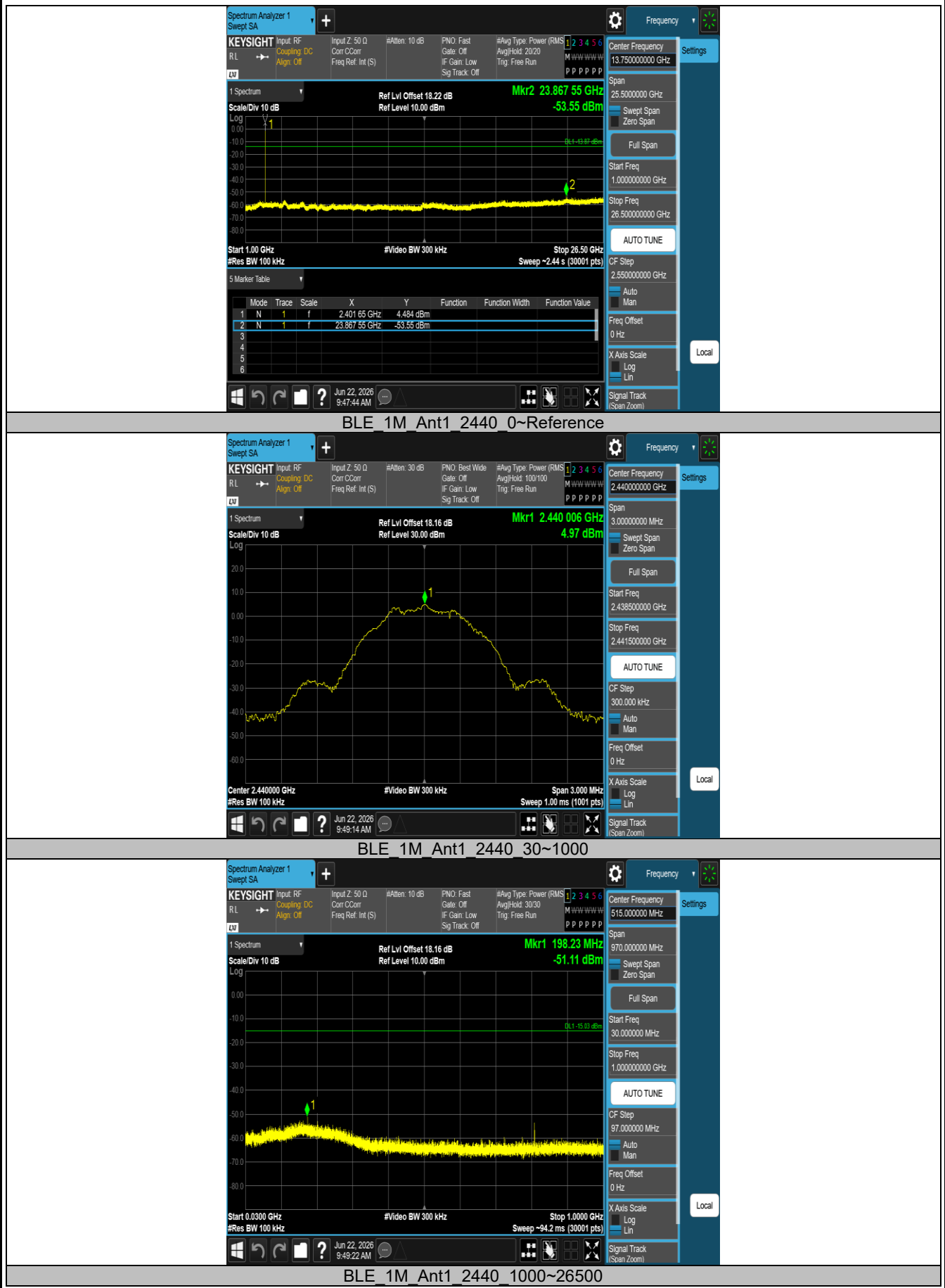
Appendix A.5: Test Results of Conducted Spurious Emission

Test Result

TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	6.13	6.13	---	PASS
			30~1000	6.13	-51.53	≤-13.87	PASS
			1000~26500	6.13	-53.55	≤-13.87	PASS
		2440	Reference	4.97	4.97	---	PASS
			30~1000	4.97	-51.11	≤-15.03	PASS
			1000~26500	4.97	-54.04	≤-15.03	PASS
		2480	Reference	4.03	4.03	---	PASS
			30~1000	4.03	-52.52	≤-15.97	PASS
			1000~26500	4.03	-52.99	≤-15.97	PASS
BLE_2M	Ant1	2402	Reference	6.03	6.03	---	PASS
			30~1000	6.03	-52.4	≤-13.97	PASS
			1000~26500	6.03	-53.51	≤-13.97	PASS
		2440	Reference	4.95	4.95	---	PASS
			30~1000	4.95	-52.17	≤-15.05	PASS
			1000~26500	4.95	-54.07	≤-15.05	PASS
		2480	Reference	4.12	4.12	---	PASS
			30~1000	4.12	-52.69	≤-15.88	PASS
			1000~26500	4.12	-53.91	≤-15.88	PASS

Test Graphs





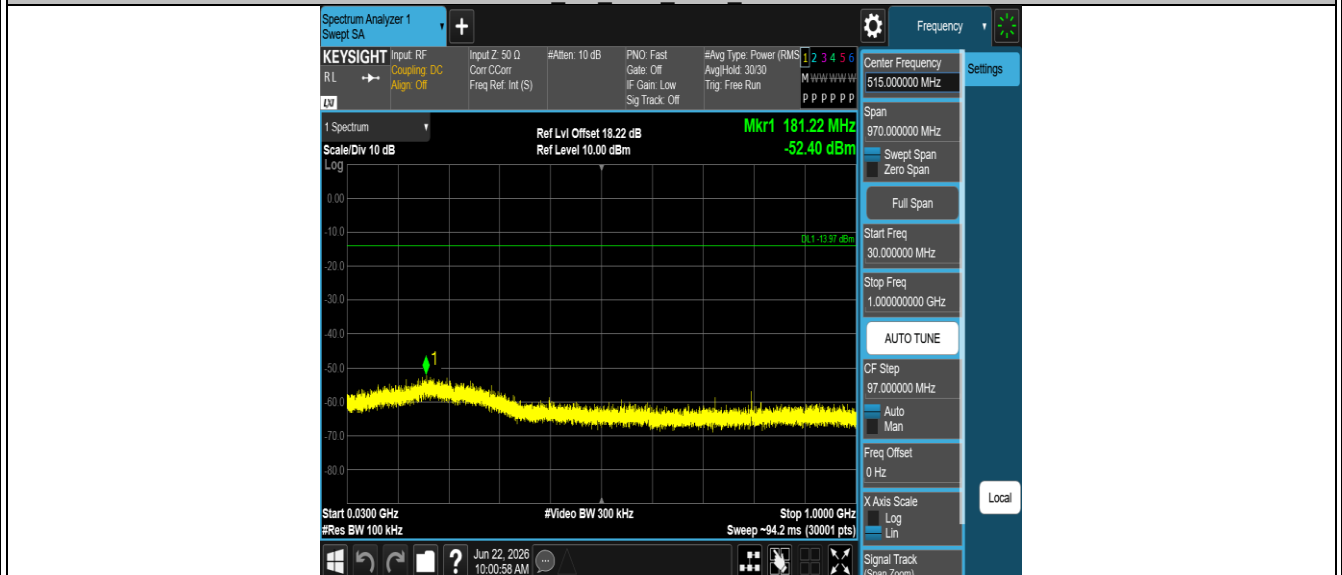




BLE 2M Ant1 2402 0~Reference



BLE 2M Ant1 2402 30~1000



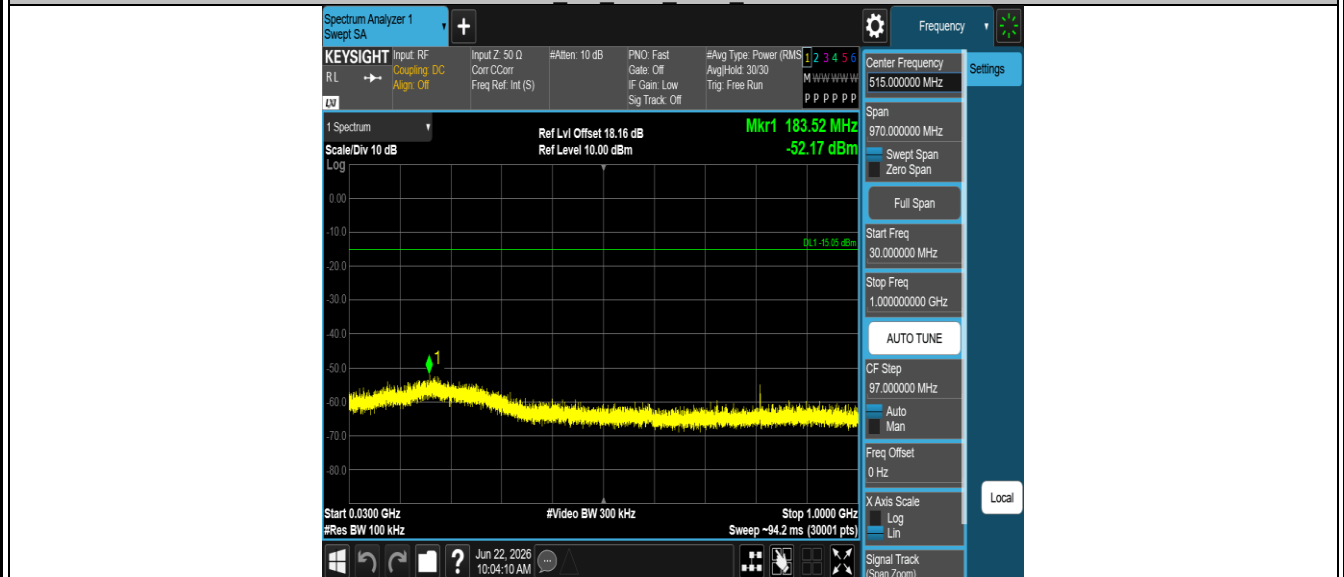
BLE 2M Ant1 2402 1000~26500



BLE 2M Ant1 2440 0~Reference



BLE 2M Ant1 2440 30~1000



BLE 2M Ant1 2440 1000~26500





Appendix A.6: Test Results of Radiated Spurious Emissions

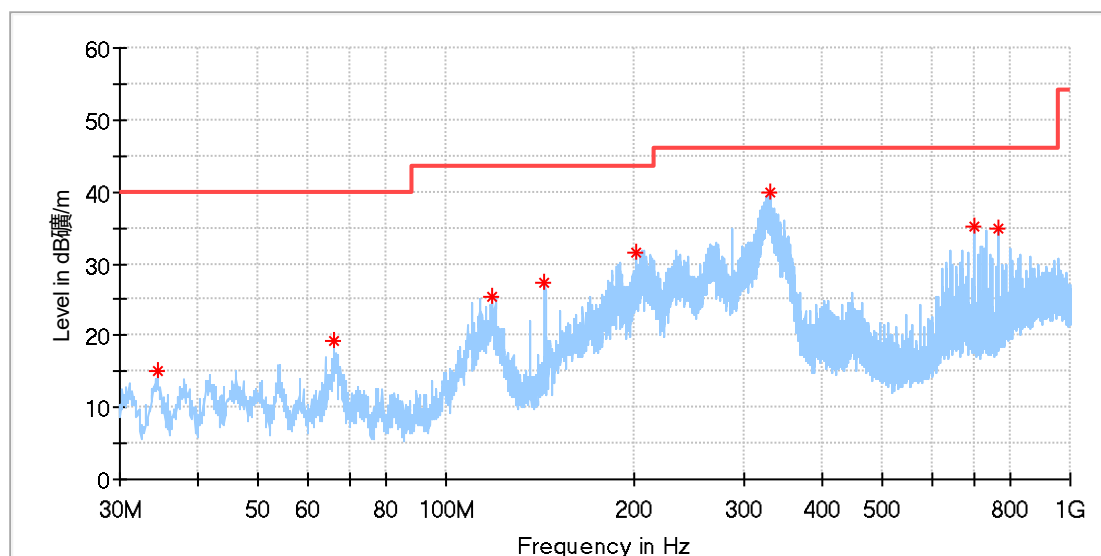
Note:

- 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.

30MHz - 1GHz

EUT Information

EUT Name:	Humanoid Robot
Model:	H2 EDU
Test Mode:	BLE 1M_Mid channel
Order No/Sample No:	A004293048-004
Test Voltage:	Battery
Remark:	Temp 23.8°C Humi:57%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

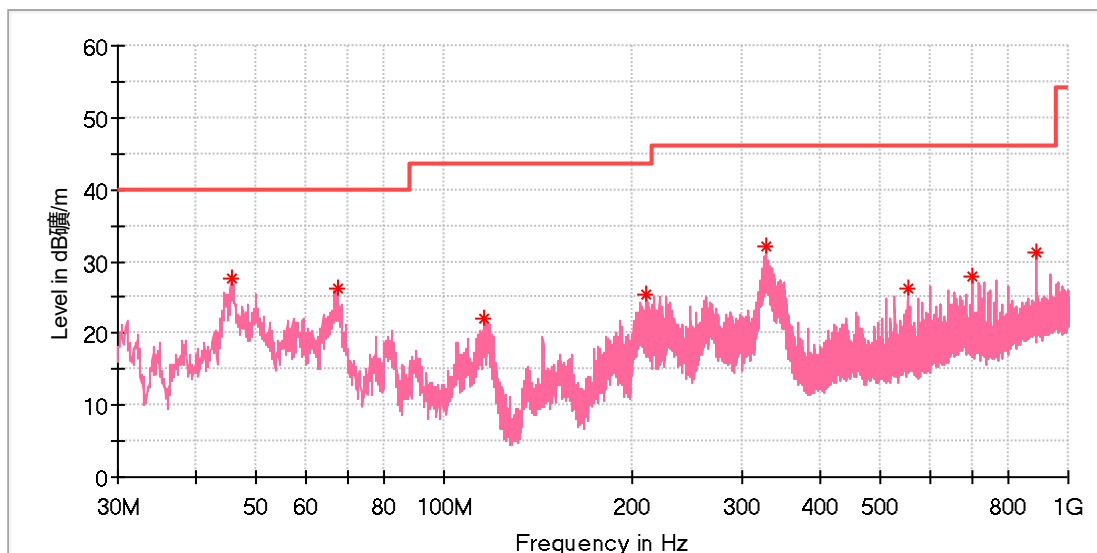
Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
34.472778	15.04	40.00	24.96	100.0	H	289.0	-22.1
66.213333	19.17	40.00	20.83	100.0	H	178.0	-20.7
118.593333	25.44	43.50	18.06	100.0	H	267.0	-20.6
143.975000	27.39	43.50	16.11	100.0	H	298.0	-22.4
200.935556	31.55	43.50	11.95	100.0	H	69.0	-19.1
330.646111	39.93	46.00	6.07	100.0	H	289.0	-15.3
703.988333	35.06	46.00	10.94	100.0	H	259.0	-7.9
768.008333	34.90	46.00	11.10	100.0	H	259.0	-6.7

Final_Result

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

EUT Information

EUT Name: Humanoid Robot
Model: H2 EDU
Test Mode: BLE 1M_Mid channel
Order No/Sample No: A004293048-004
Test Voltage: Battery
Remark: Temp 23.8°C Humi:57%
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)
45.789444	27.67	40.00	12.33	100.0	V	59.0	-18.8
67.506667	26.20	40.00	13.80	100.0	V	285.0	-21.1
116.060556	21.92	43.50	21.58	100.0	V	87.0	-20.1
210.204444	25.47	43.50	18.03	100.0	V	15.0	-18.9
327.143333	31.95	46.00	14.05	100.0	V	15.0	-15.4
551.967778	26.32	46.00	19.68	100.0	V	251.0	-10.7
704.042222	27.85	46.00	18.15	100.0	V	117.0	-7.9
890.982778	31.20	46.00	14.80	100.0	V	0.0	-4.9

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)
---	---	---	---	---	---		---	---

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
93.5	118.5	118.5	118.5	0.0	100	0	0	0

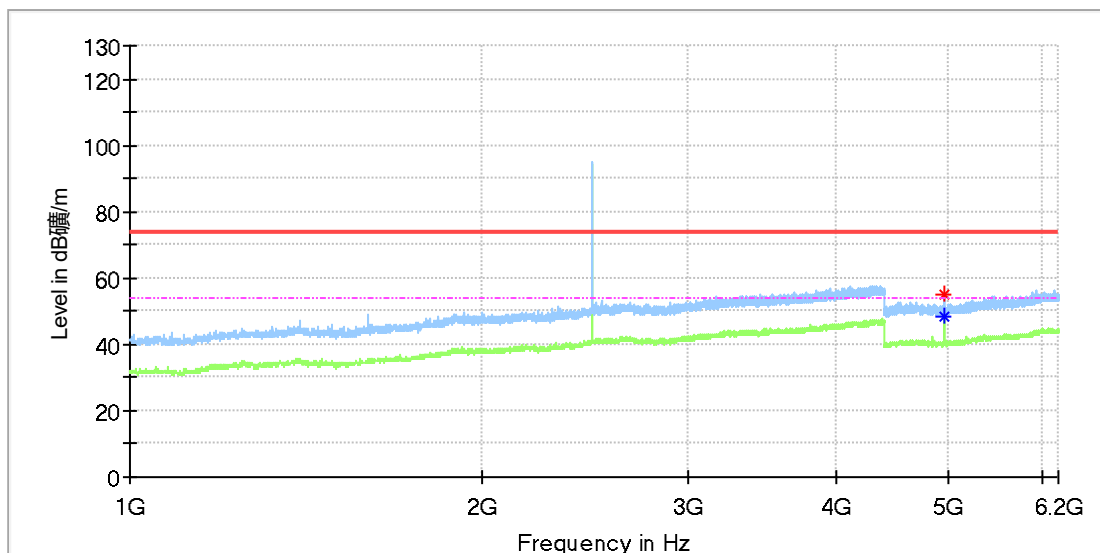
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---		---	---

EUT Name:	Humanoid Robot
Model:	H2 EDU
Test Mode:	BLE 1M_Mid channel
Order No/Sample No:	A004293048-004
Test Voltage:	Battery
Remark:	Temp 23.8°C Humi:57%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

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)
93.5	118.5	118.5	118.5	0.0	100	0	0	0

EUT Name:	Humanoid Robot
Model:	H2 EDU
Test Mode:	BLE 1M_High channel
Order No/Sample No:	A004293048-004
Test Voltage:	Battery
Remark:	Temp 23.8°C Humi:57%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

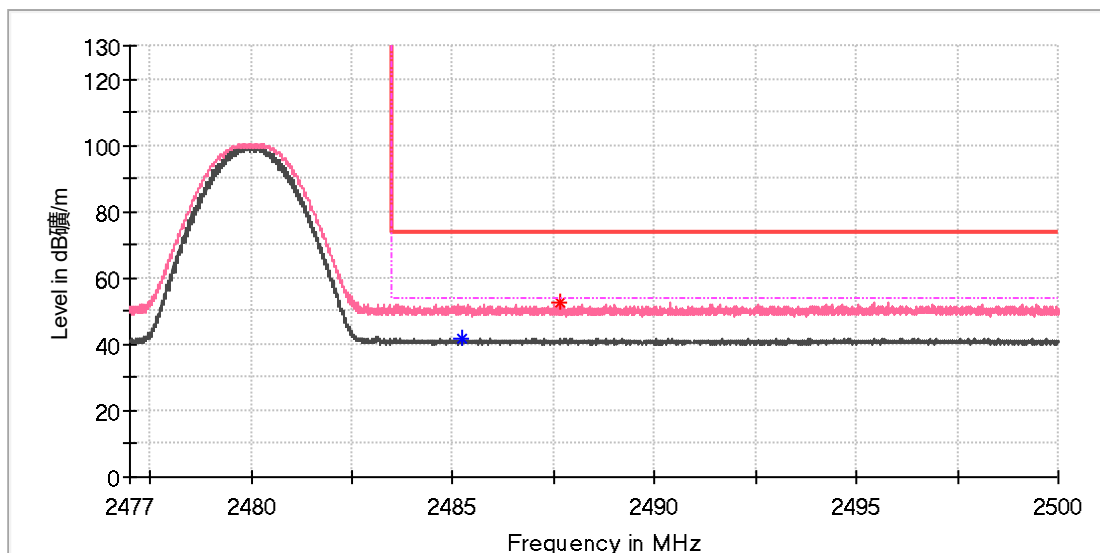


Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4959.500000	54.83	---	74.00	19.17	150.0	H	109.0	13.3
4960.000000	---	48.51	54.00	5.49	150.0	H	109.0	13.3

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	30.0	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)
---	---	---	---	---	---		---	---

EUT Name:	Humanoid Robot
Model:	H2 EDU
Test Mode:	BLE 1M_High channel
Order No/Sample No:	A004293048-004
Test Voltage:	Battery
Remark:	Temp 23.8°C Humi:57%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2485.238971	---	41.51	54.00	12.49	150.0	V	0.0	9.0
2487.661765	52.47	---	74.00	21.53	150.0	V	133.0	9.0

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

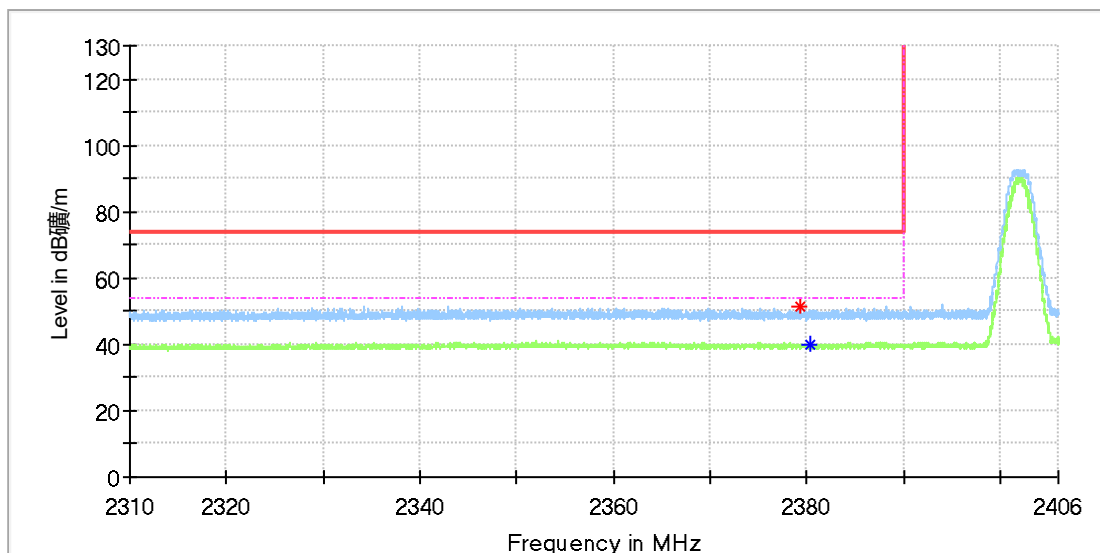
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
100.00	100.00	100.00	100.00	100.00	100.00		100.00	100.00

EUT Name:	Humanoid Robot
Model:	H2 EDU
Test Mode:	BLE 2M_High channel
Order No/Sample No:	A004293048-004
Test Voltage:	Battery
Remark:	Temp 23.8°C Humi:57%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
93.75	122.0	122.0	122.0	0.0	30.0	0	0	0

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

EUT Name:	Humanoid Robot
Model:	H2 EDU
Test Mode:	BLE 2M_Low channel
Order No/Sample No:	A004293048-004
Test Voltage:	Battery
Remark:	Temp 23.8°C Humi:57%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2379.262941	51.28	---	74.00	22.72	150.0	H	125.0	8.5
2380.286177	---	40.00	54.00	14.00	150.0	H	181.0	8.5

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
93.75	122.0	118.0	120.0	2.0	30.0	V	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	118.0	115.0	115.0	0.0	100.0	0	0	0