

FCC Appendix RF Test Data for BLE

FCC ID : 2BTQS-WSCOR2000

Company : Worksport USA Operations Corporation

EUT : Worksport COR Hub

Model Number : WS-COR-2000

Report No. : CTA25110501901

Reviewed By : Eric Wang

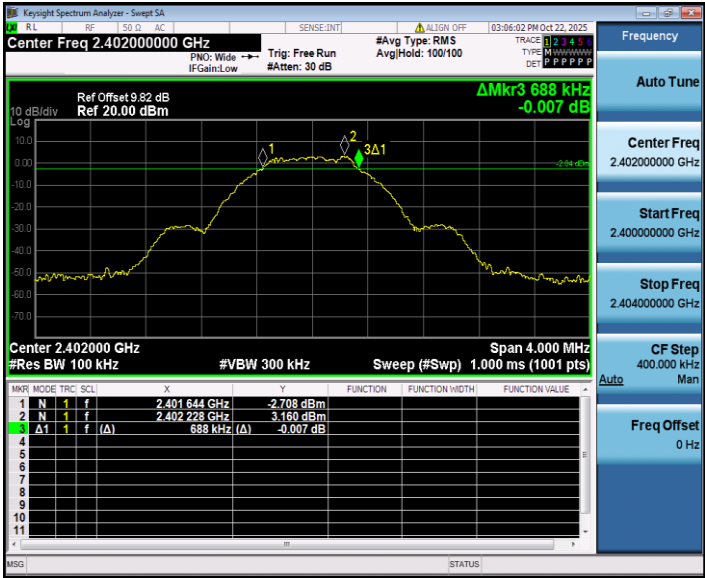
Appendix A: DTS Bandwidth

Test Result

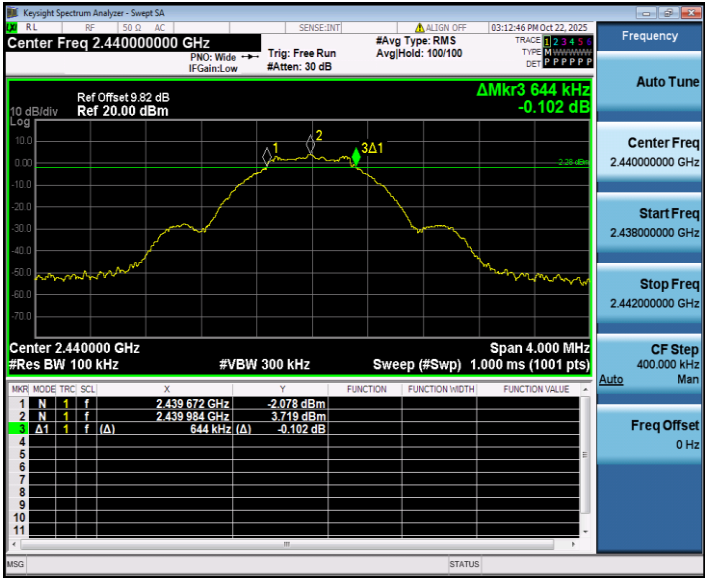
TestMode	Antenna	Freq[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.688	2401.644	2402.332	0.5	PASS
		2440	0.644	2439.672	2440.316	0.5	PASS
		2480	0.720	2479.624	2480.344	0.5	PASS
BLE_2M	Ant1	2402	1.252	2401.332	2402.584	0.5	PASS
		2440	1.208	2439.348	2440.556	0.5	PASS
		2480	1.148	2479.420	2480.568	0.5	PASS

Test Graphs

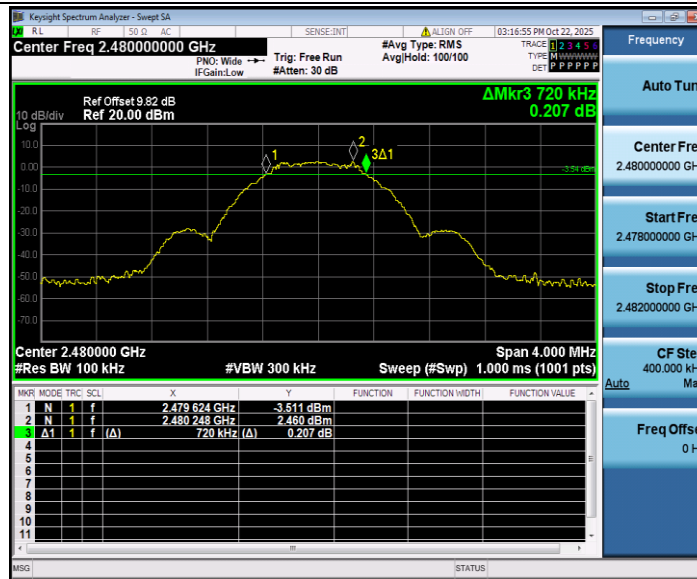
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



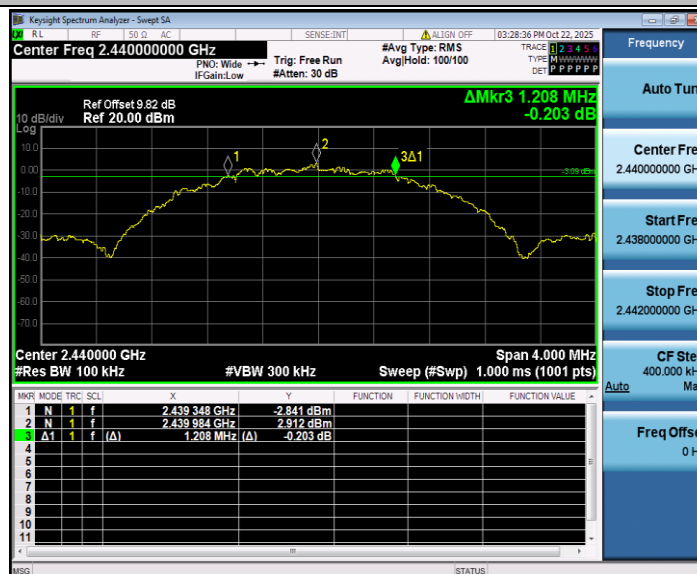
BLE_1M_Ant1_2480



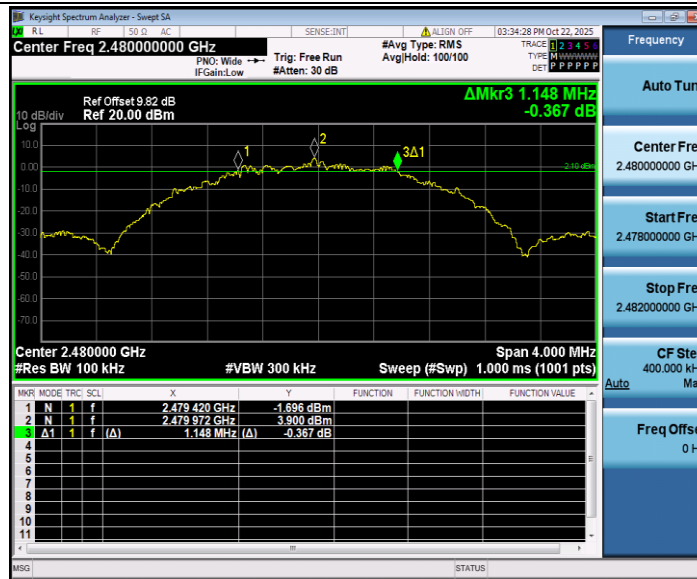
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480



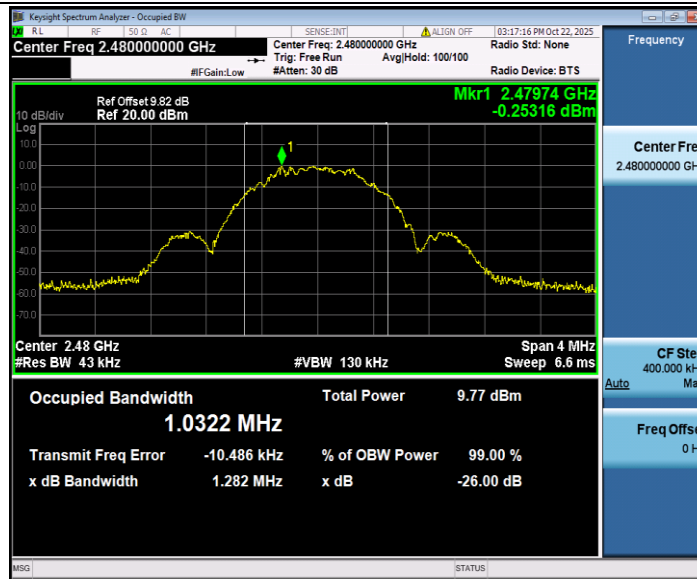
Appendix B: Occupied Channel Bandwidth

Test Result

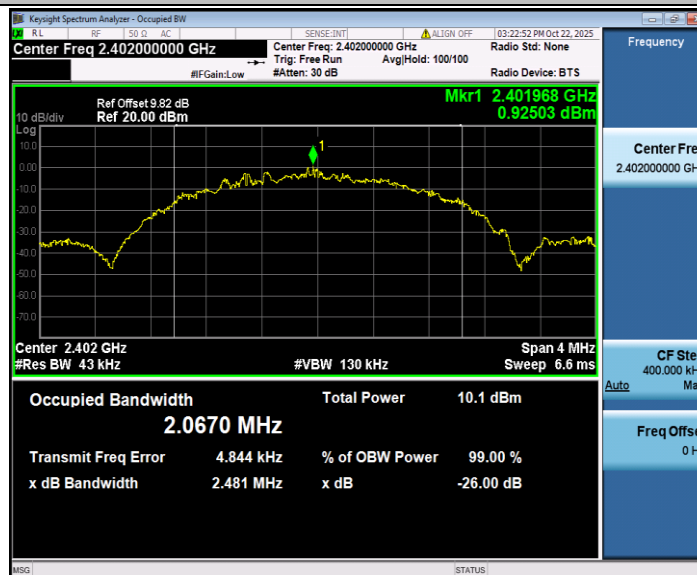
TestMode	Antenna	Freq[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0290	2401.475	2402.504	---	---
		2440	1.0263	2439.475	2440.501	---	---
		2480	1.0322	2479.473	2480.506	---	---
BLE_2M	Ant1	2402	2.0670	2400.971	2403.038	---	---
		2440	2.0600	2438.973	2441.033	---	---
		2480	2.0592	2478.975	2481.034	---	---

Test Graphs





BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480



Appendix C: Maximum conducted output power

Test Result Peak

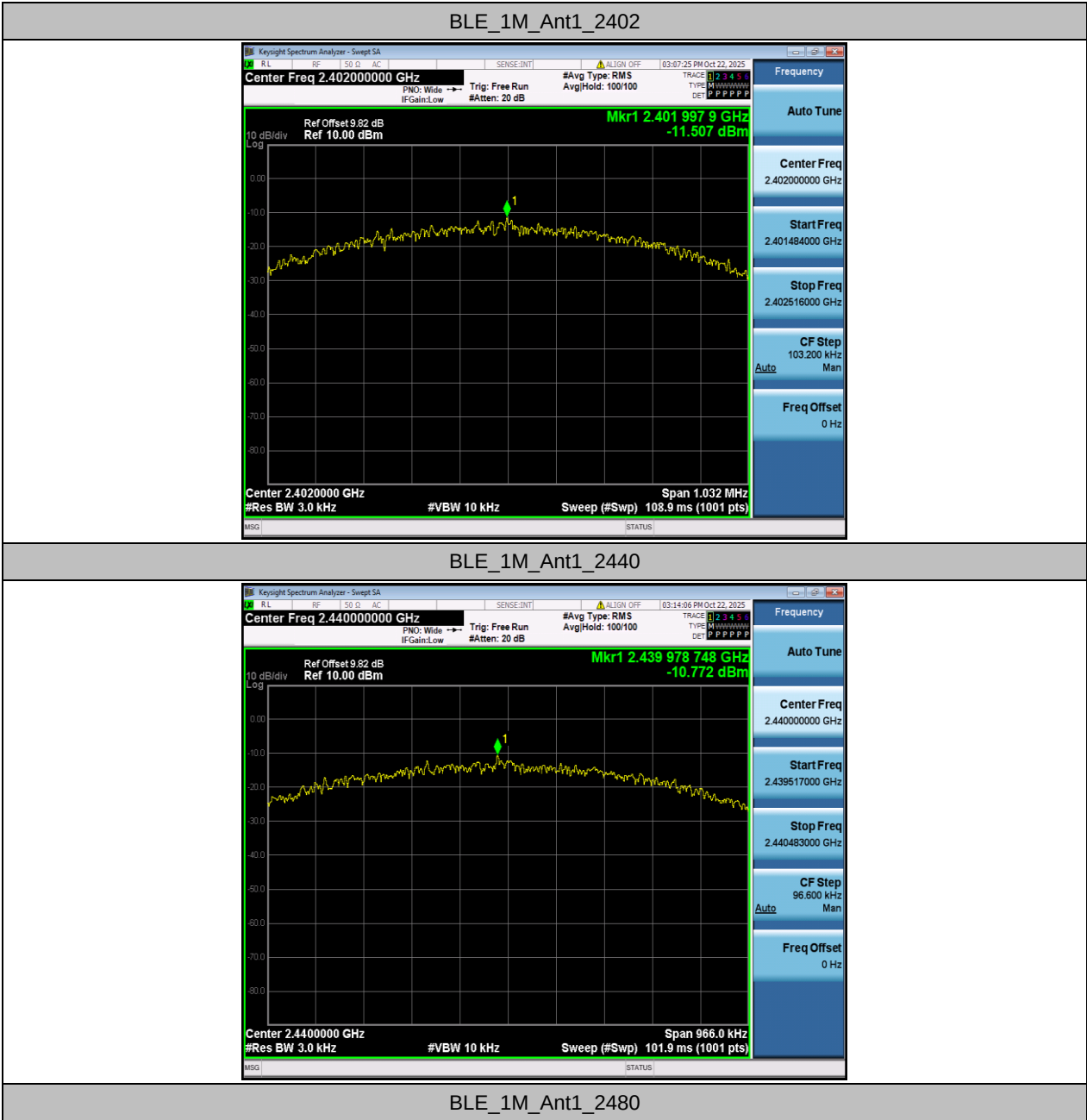
TestMode	Antenna	Freq[MHz]	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
BLE_1M	Ant1	2402	3.51	≤30	PASS
		2440	4.23	≤30	PASS
		2480	3.9	≤30	PASS
BLE_2M	Ant1	2402	4.61	≤30	PASS
		2440	4.68	≤30	PASS
		2480	4.73	≤30	PASS

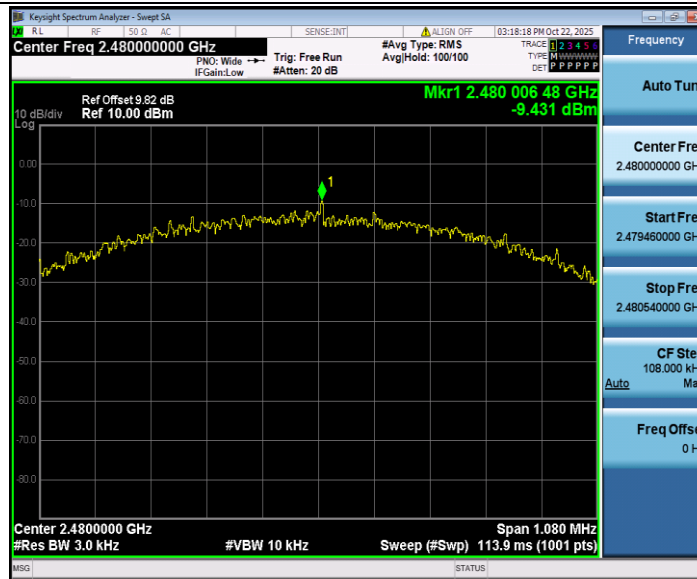
Appendix D: Maximum power spectral density

Test Result

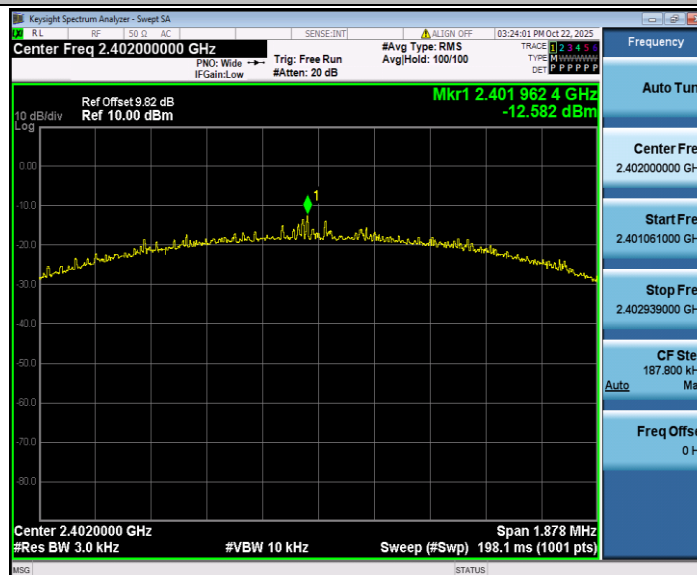
TestMode	Antenna	Freq[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-11.51	≤8.00	PASS
		2440	-10.77	≤8.00	PASS
		2480	-9.43	≤8.00	PASS
BLE_2M	Ant1	2402	-12.58	≤8.00	PASS
		2440	-12.5	≤8.00	PASS
		2480	-13.92	≤8.00	PASS

Test Graphs

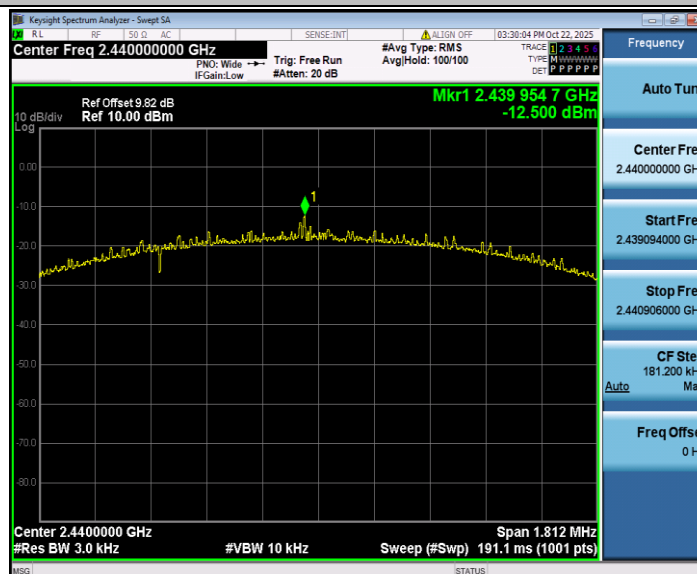




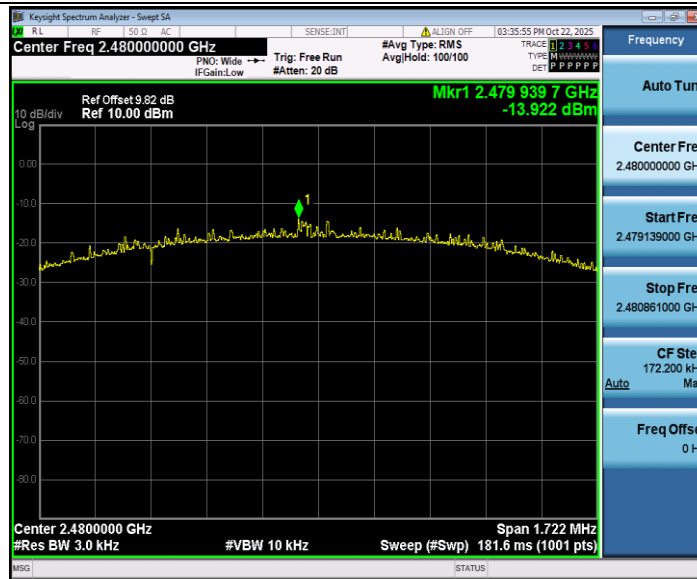
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480

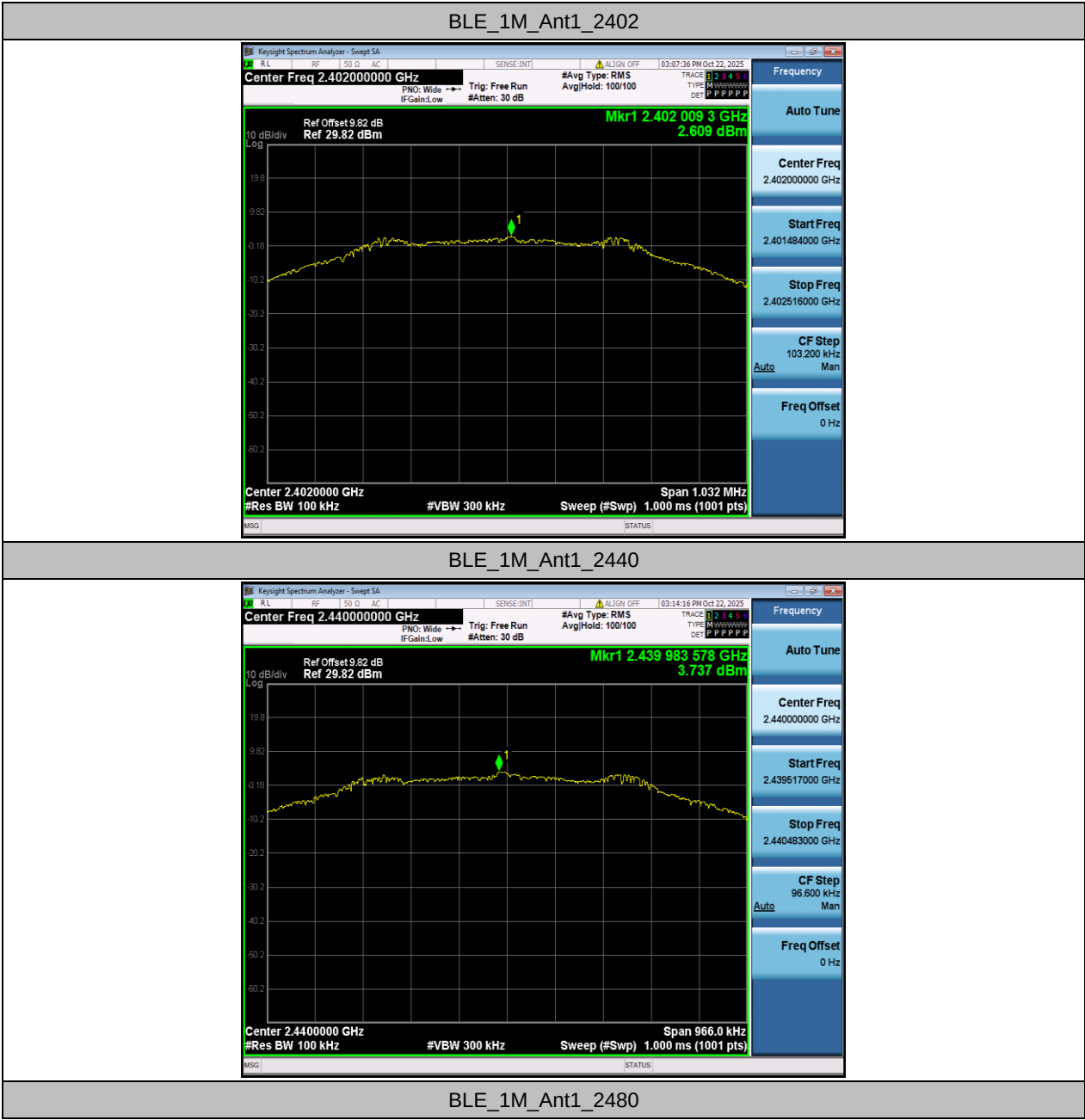


ppendix E: Reference level measurement

Test Result

TestMode	Antenna	Freq[MHz]	Max.Point[MHz]	Result[dBm]
BLE_1M	Ant1	2402	2402.01	2.61
		2440	2439.98	3.74
		2480	2479.99	3.78
BLE_2M	Ant1	2402	2401.96	2.95
		2440	2439.98	4.01
		2480	2479.98	4.32

Test Graphs





BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480

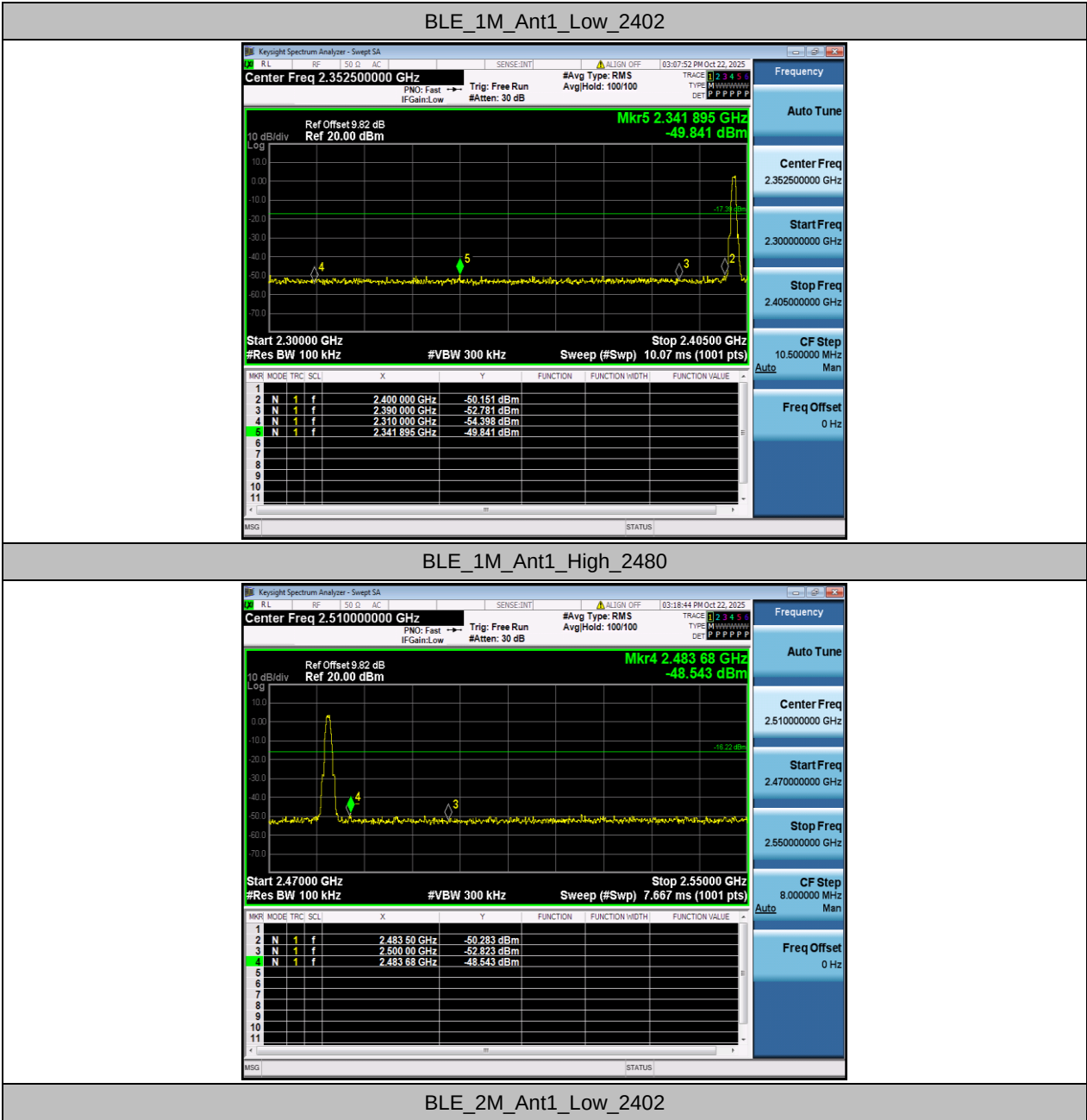


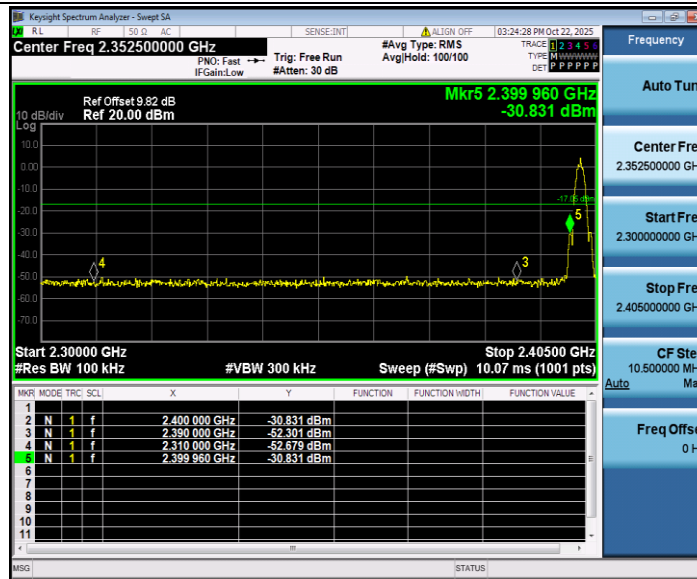
Appendix F: Band edge measurements

Test Result

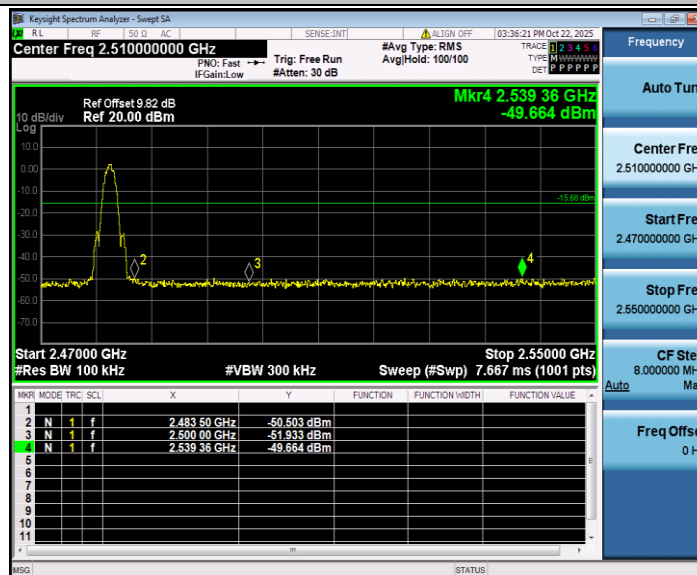
TestMode	Antenna	ChName	Freq[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	2.61	-49.84	≤ -17.39	PASS
		High	2480	3.78	-48.54	≤ -16.22	PASS
BLE_2M	Ant1	Low	2402	2.95	-30.83	≤ -17.05	PASS
		High	2480	4.32	-49.66	≤ -15.68	PASS

Test Graphs





BLE_2M_Ant1_High_2480

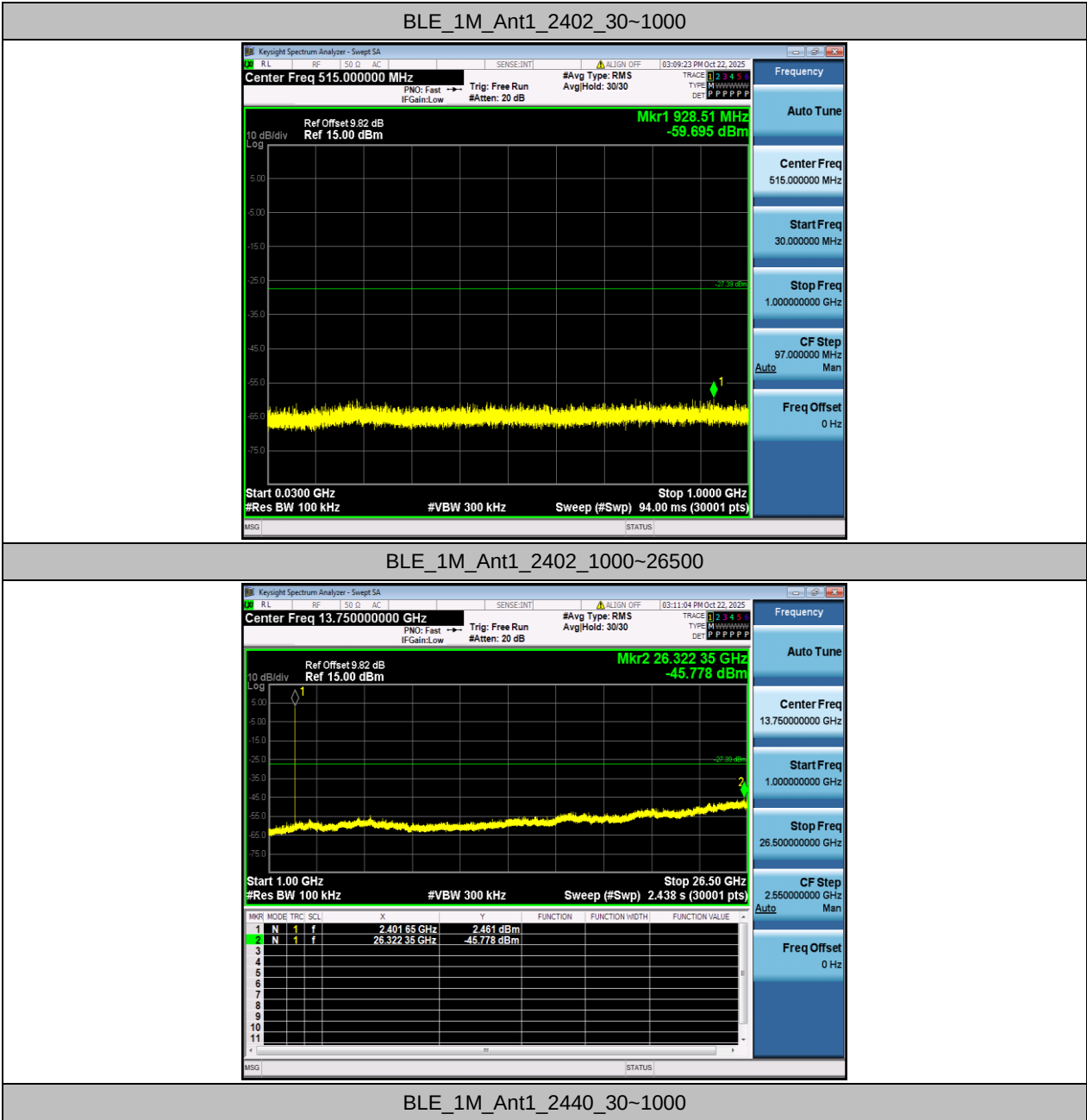


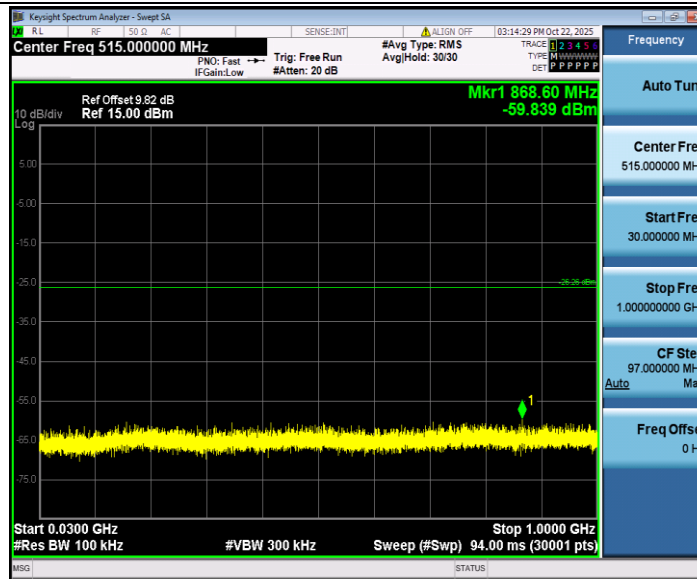
Appendix G: Conducted Spurious Emission

Test Result

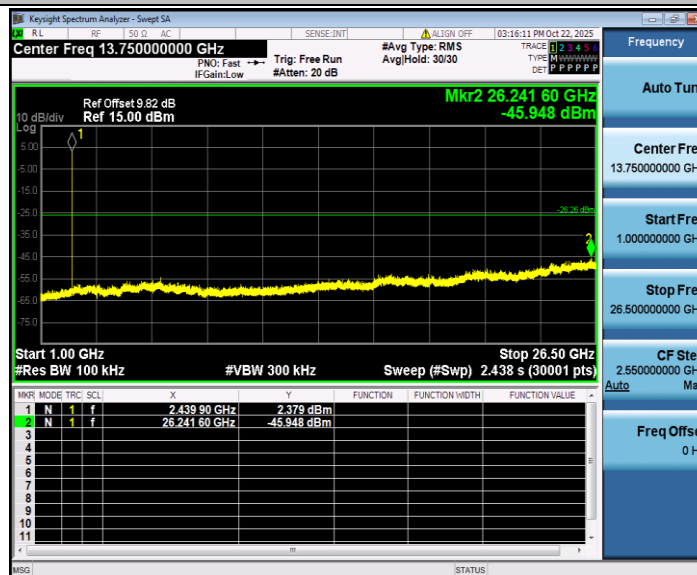
TestMode	Antenna	Freq[MHz]	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	30~1000	2.61	-59.7	≤-27.39	PASS
			1000~26500	2.61	-45.78	≤-27.39	PASS
		2440	30~1000	3.74	-59.84	≤-26.26	PASS
			1000~26500	3.74	-45.95	≤-26.26	PASS
		2480	30~1000	3.78	-59.26	≤-26.22	PASS
			1000~26500	3.78	-46.01	≤-26.22	PASS
BLE_2M	Ant1	2402	30~1000	2.95	-59.9	≤-27.05	PASS
			1000~26500	2.95	-46.29	≤-27.05	PASS
		2440	30~1000	4.01	-59.18	≤-25.99	PASS
			1000~26500	4.01	-46.4	≤-25.99	PASS
		2480	30~1000	4.32	-59.69	≤-25.68	PASS
			1000~26500	4.32	-46	≤-25.68	PASS

Test Graphs

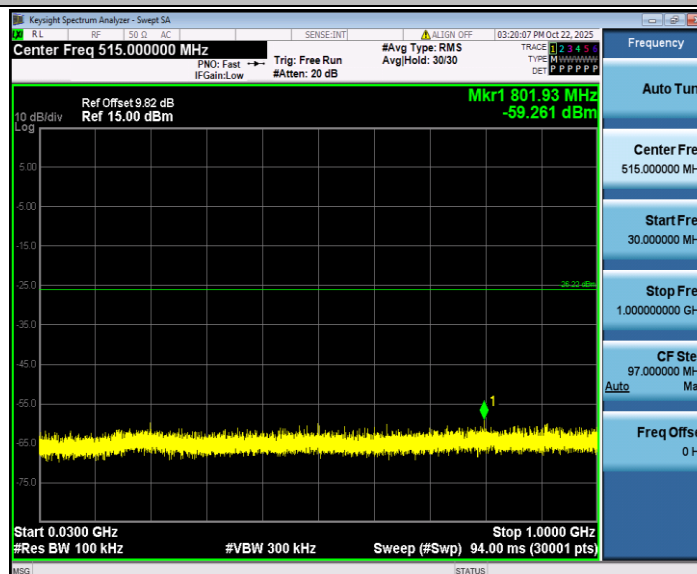




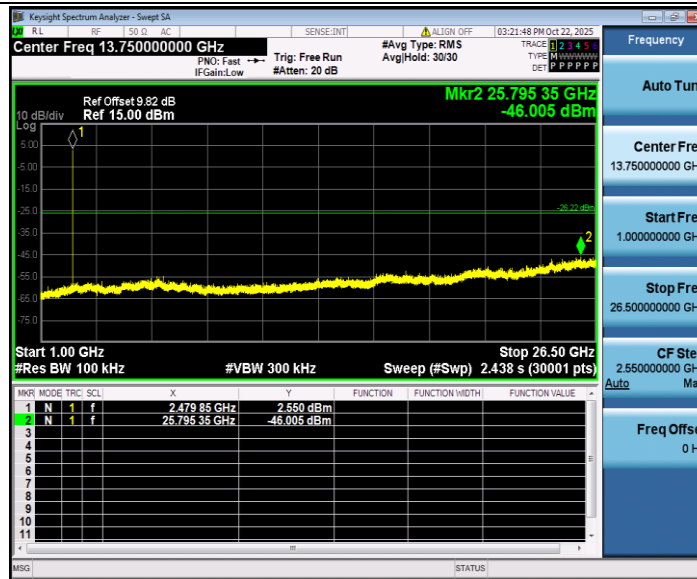
BLE_1M_Ant1_2440_1000~26500



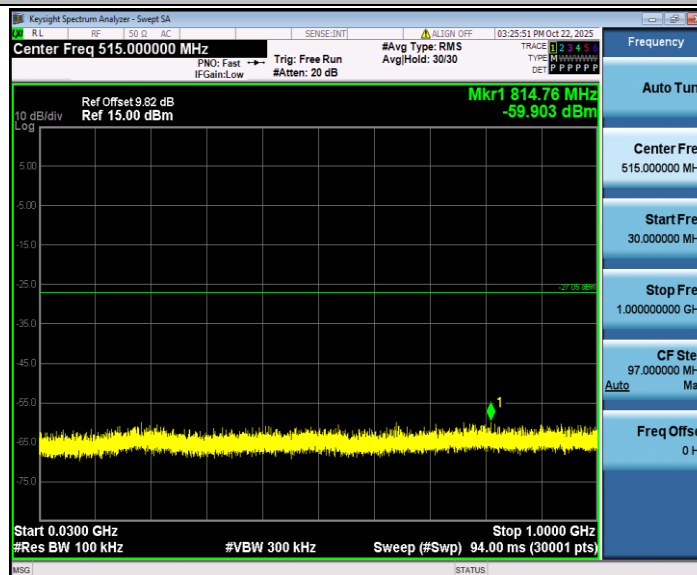
BLE_1M_Ant1_2480_30~1000



BLE_1M_Ant1_2480_1000~26500



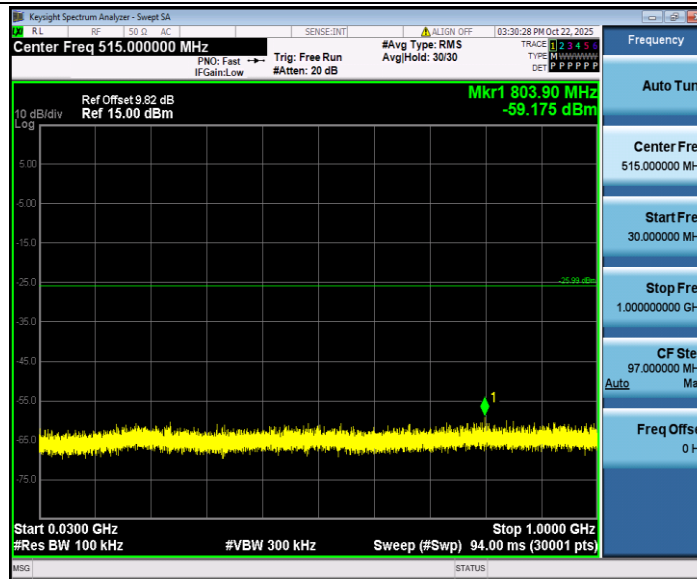
BLE_2M_Ant1_2402_30~1000



BLE_2M_Ant1_2402_1000~26500



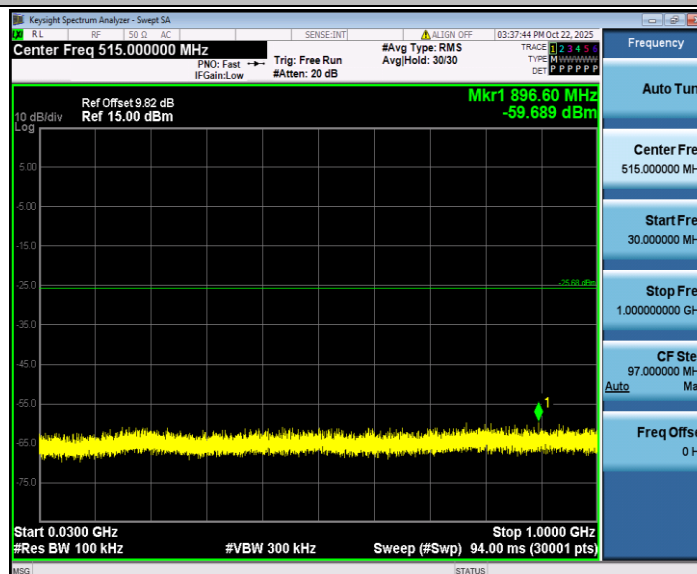
BLE_2M_Ant1_2440_30~1000



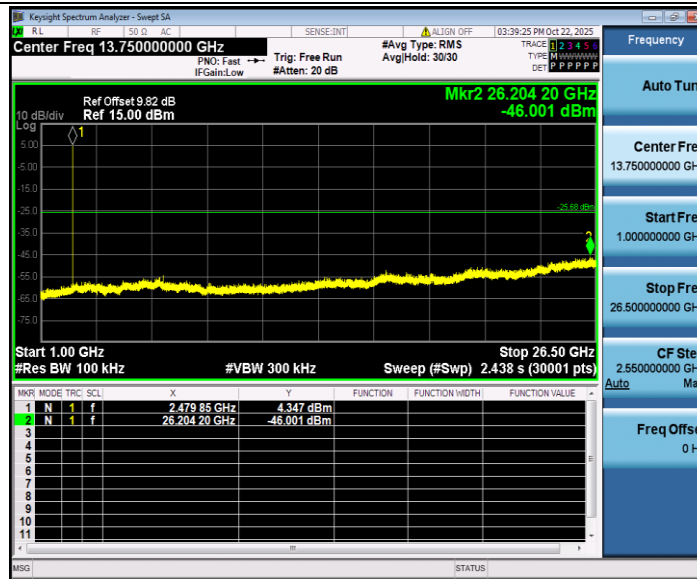
BLE_2M_Ant1_2440_1000~26500



BLE_2M_Ant1_2480_30~1000



BLE_2M_Ant1_2480_1000~26500



Appendix H: Duty Cycle

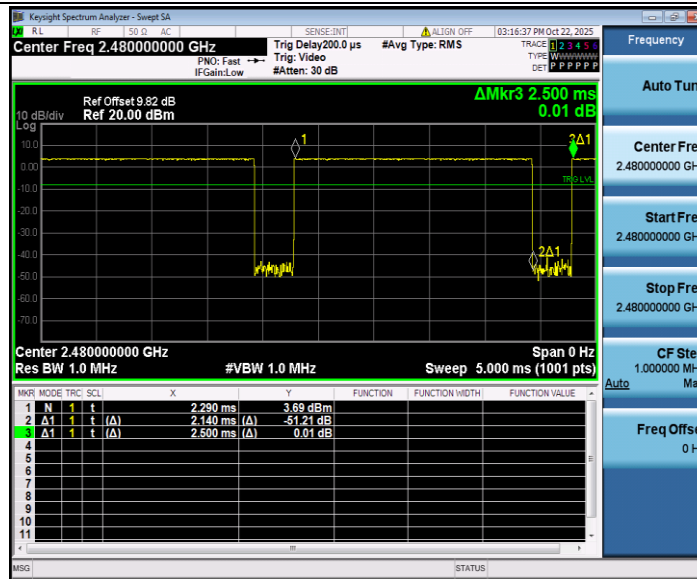
Test Result

TestMode	Antenna	Freq[MHz]	ON Time [ms]	Period [ms]	DC [%]	Limit	Verdict
BLE_1M	Ant1	2402	2.14	2.50	85.60	---	---
		2440	2.14	2.50	85.60	---	---
		2480	2.14	2.50	85.60	---	---
BLE_2M	Ant1	2402	1.08	1.88	57.45	---	---
		2440	1.08	1.87	57.75	---	---
		2480	1.08	1.88	57.45	---	---

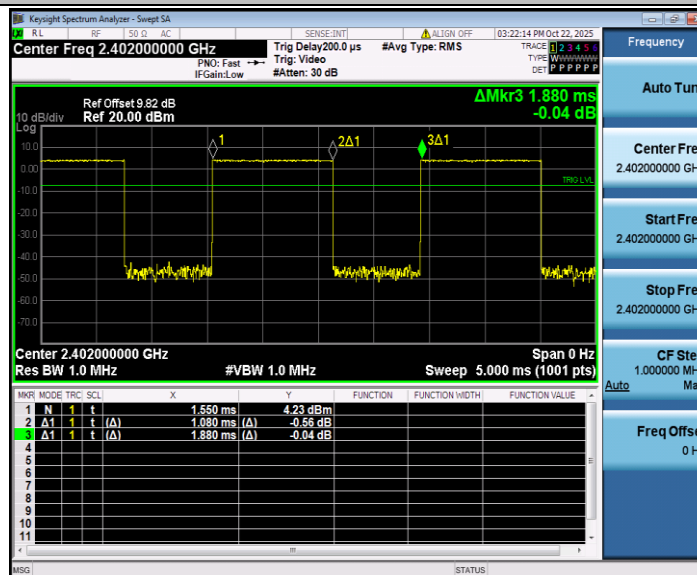
DC=ON Time/Period*100%

Test Graphs

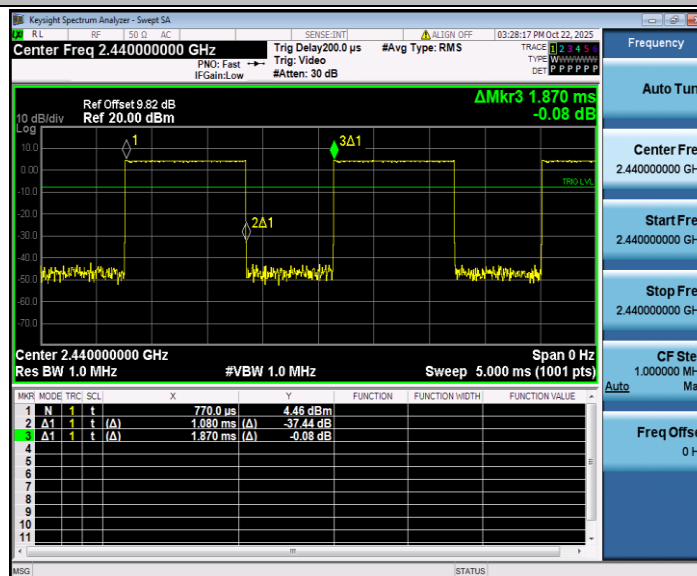




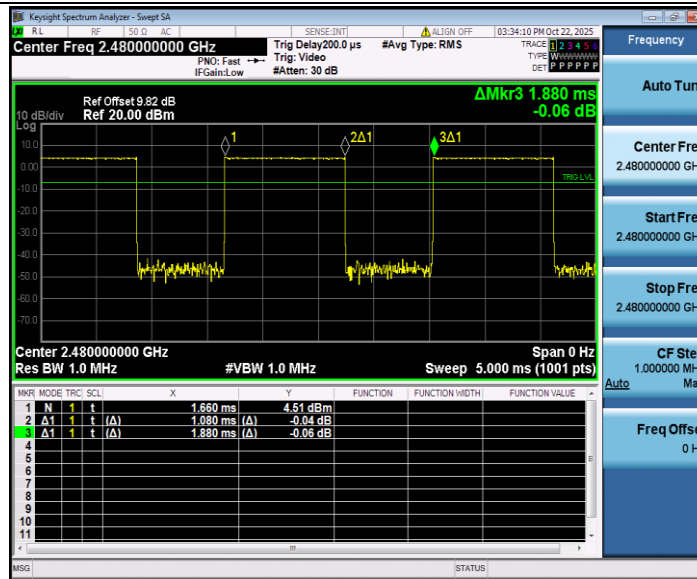
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480



Appendix I: Emissions in Restricted Bands

Test Result

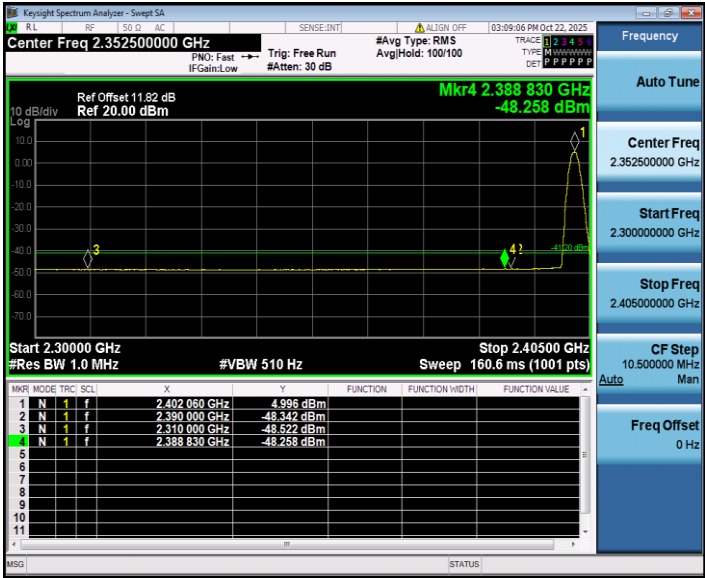
TestMode	Antenna	ChName	Freq(MHz)	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
BLE_1M	Ant1	Low	2402	AV	2310.000	-48.52	≤-41.20	46.68	≤54	PASS
				AV	2388.830	-48.26	≤-41.20	46.94	≤54	PASS
				AV	2390.000	-48.34	≤-41.20	46.86	≤54	PASS
				Peak	2310.000	-41.7	≤-21.20	53.50	≤74	PASS
				Peak	2354.075	-38.7	≤-21.20	56.50	≤74	PASS
				Peak	2390.000	-41.95	≤-21.20	53.25	≤74	PASS
		High	2480	AV	2483.500	-46.08	≤-41.20	49.12	≤54	PASS
				AV	2483.520	-46.08	≤-41.20	49.12	≤54	PASS
				AV	2500.000	-47.8	≤-41.20	47.40	≤54	PASS
				Peak	2483.500	-40.38	≤-21.20	54.82	≤74	PASS
				Peak	2488.080	-38.82	≤-21.20	56.38	≤74	PASS
				Peak	2500.000	-42.54	≤-21.20	52.66	≤74	PASS
BLE_2M	Ant1	Low	2402	AV	2310.000	-48.46	≤-41.20	46.74	≤54	PASS
				AV	2388.725	-47.9	≤-41.20	47.30	≤54	PASS
				AV	2390.000	-48.2	≤-41.20	47.00	≤54	PASS
				Peak	2310.000	-40.58	≤-21.20	54.62	≤74	PASS
				Peak	2382.215	-38.44	≤-21.20	56.76	≤74	PASS
				Peak	2390.000	-42.09	≤-21.20	53.11	≤74	PASS
		High	2480	AV	2483.500	-43.81	≤-41.20	51.39	≤54	PASS
				AV	2483.520	-43.81	≤-41.20	51.39	≤54	PASS
				AV	2500.000	-47.87	≤-41.20	47.33	≤54	PASS
				Peak	2483.500	-38.66	≤-21.20	56.54	≤74	PASS
				Peak	2486.000	-38.44	≤-21.20	56.76	≤74	PASS
				Peak	2500.000	-41.87	≤-21.20	53.33	≤74	PASS

Note:

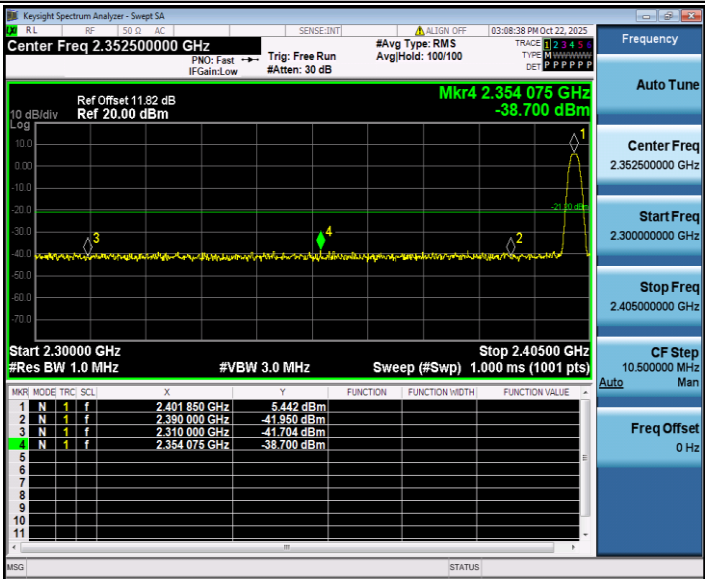
1. The Antenna Gain is compensated in the graph.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

Test Graphs

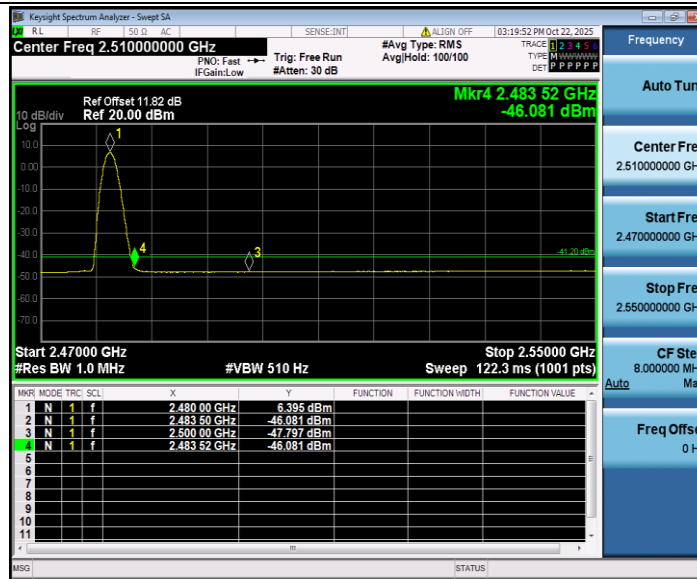
BLE_1M_Ant1_Low_2402_AV



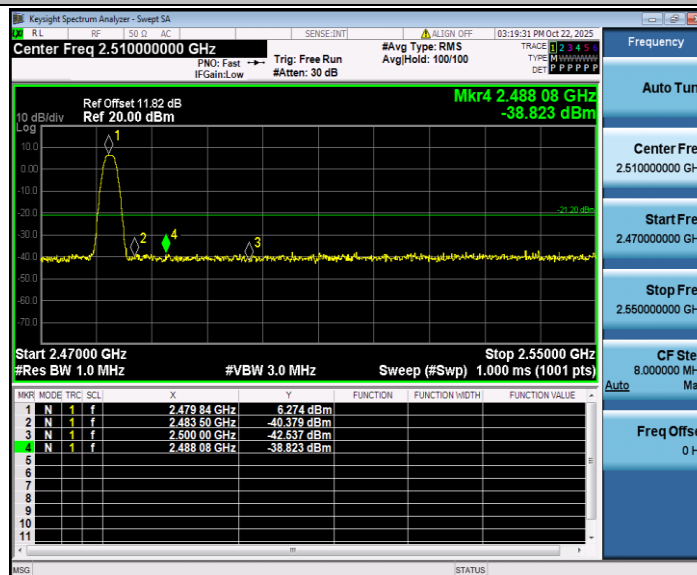
BLE_1M_Ant1_Low_2402_Peak



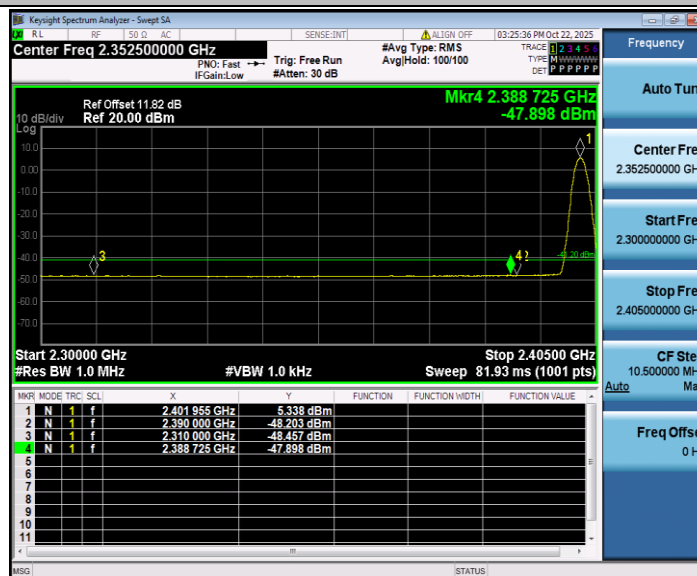
BLE_1M_Ant1_High_2480_AV



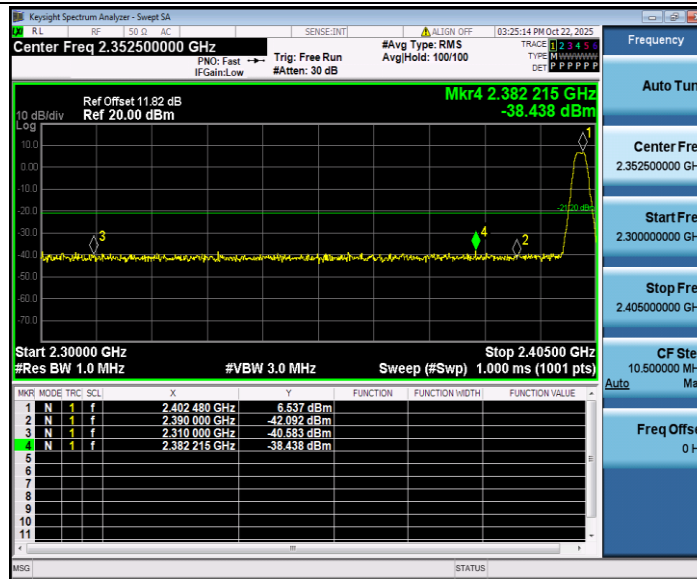
BLE_1M_Ant1_High_2480_Peak



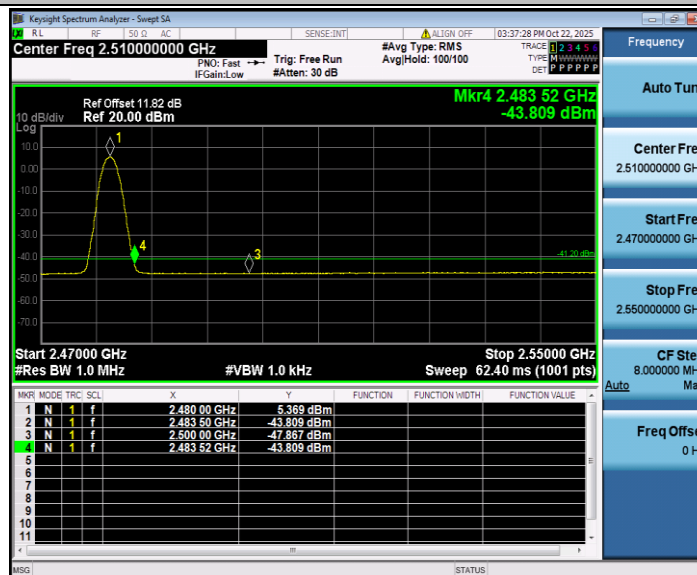
BLE_2M_Ant1_Low_2402_AV



BLE_2M_Ant1_Low_2402_Peak



BLE_2M_Ant1_High_2480_AV



BLE_2M_Ant1_High_2480_Peak

