

FCC Appendix RF Test Data for BLE

FCC ID : 2BTQS-WSCOR2001

Company : Worksport USA Operations Corporation

EUT : Worksport COR 960 Wh Battery Pack (LFP)

Model Number : WS-COR-2001

Report No. : CTA26012201601

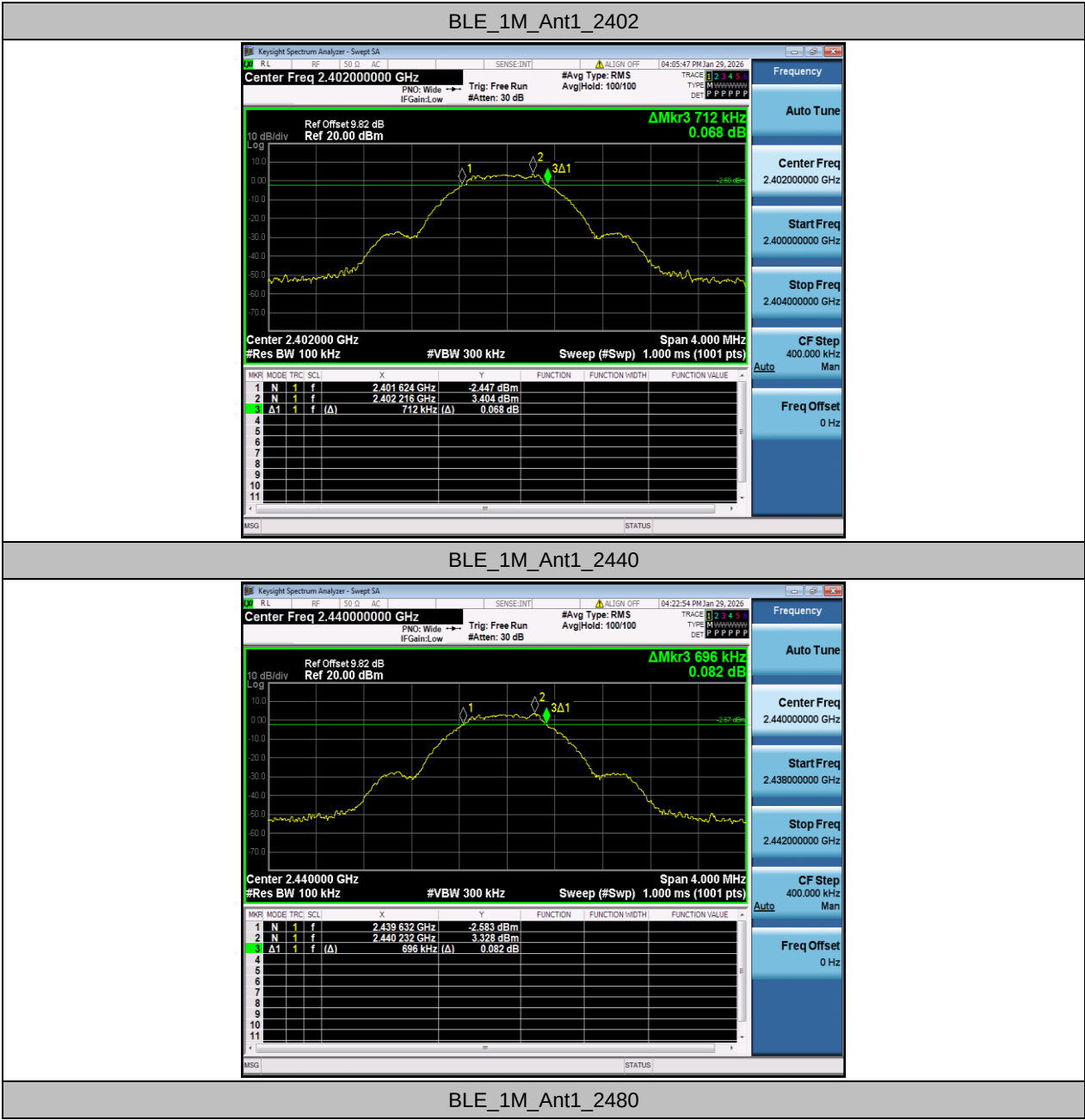
Reviewed By : Eric Wang

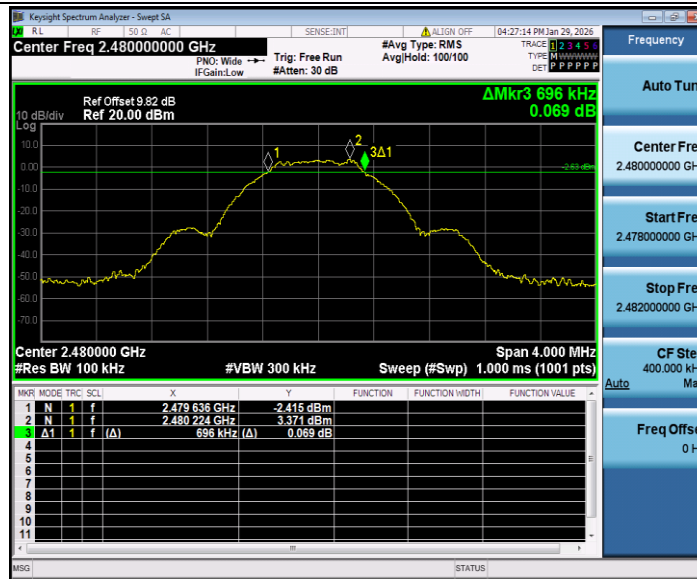
Appendix A: DTS Bandwidth

Test Result

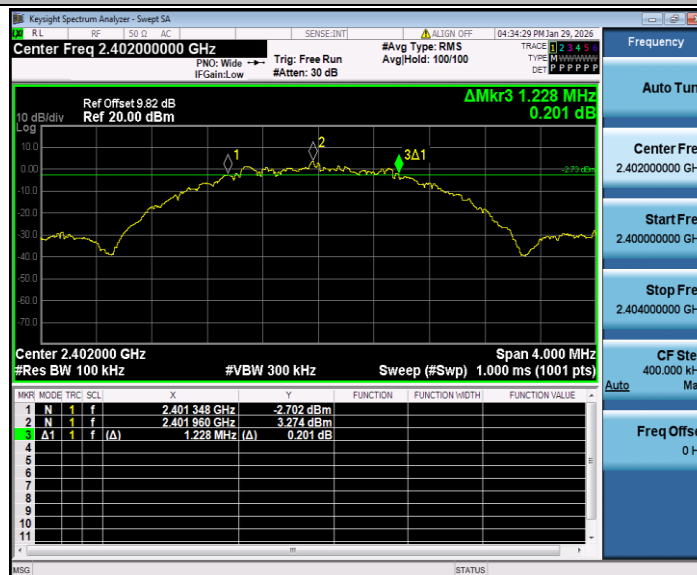
TestMode	Antenna	Freq[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.712	2401.624	2402.336	0.5	PASS
		2440	0.696	2439.632	2440.328	0.5	PASS
		2480	0.696	2479.636	2480.332	0.5	PASS
BLE_2M	Ant1	2402	1.228	2401.348	2402.576	0.5	PASS
		2440	1.132	2439.432	2440.564	0.5	PASS
		2480	1.104	2479.444	2480.548	0.5	PASS

Test Graphs

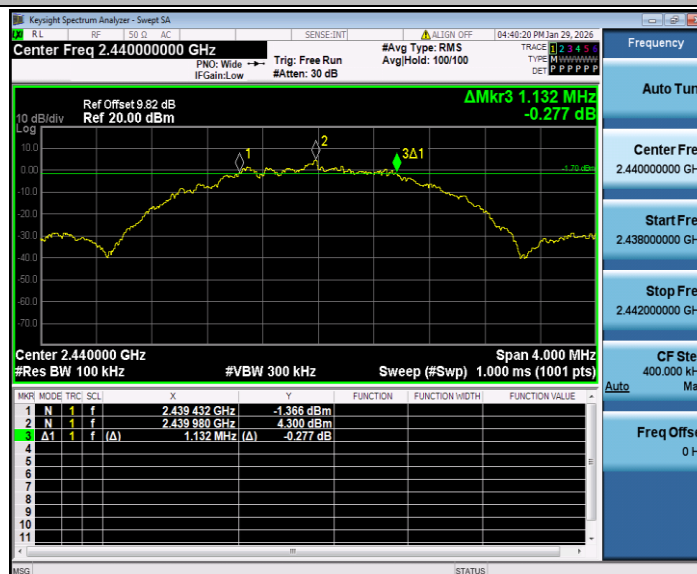




BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480



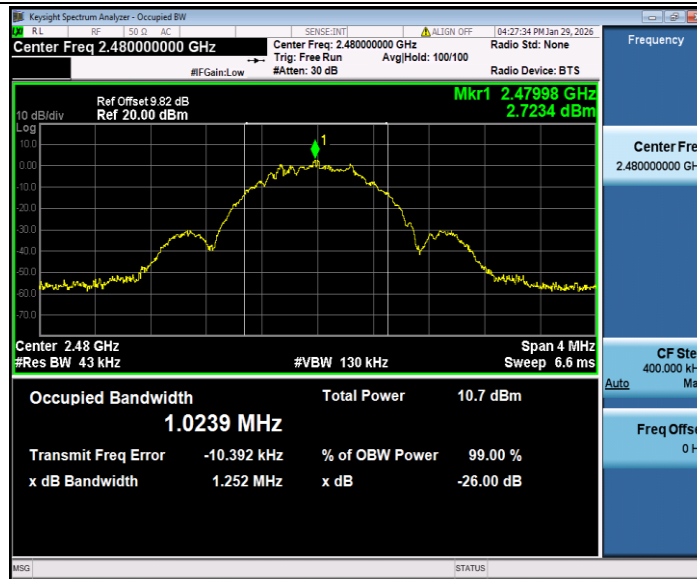
Appendix B: Occupied Channel Bandwidth

Test Result

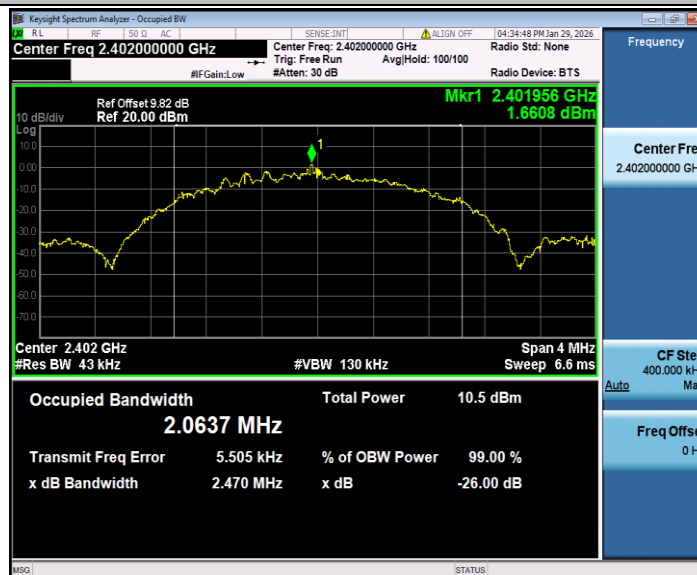
TestMode	Antenna	Freq[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0330	2401.473	2402.506	---	---
		2440	1.0294	2439.475	2440.504	---	---
		2480	1.0239	2479.478	2480.502	---	---
BLE_2M	Ant1	2402	2.0637	2400.974	2403.037	---	---
		2440	2.0640	2438.969	2441.033	---	---
		2480	2.0587	2478.976	2481.035	---	---

Test Graphs

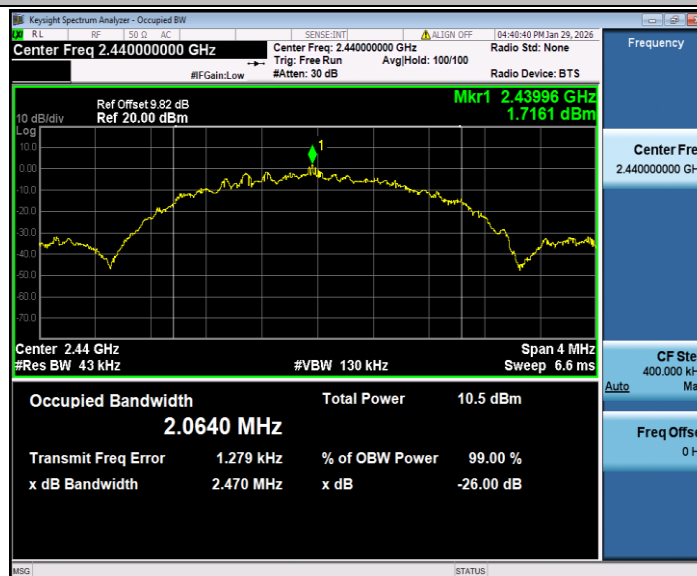




BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480



Appendix C: Maximum conducted output power

Test Result Peak

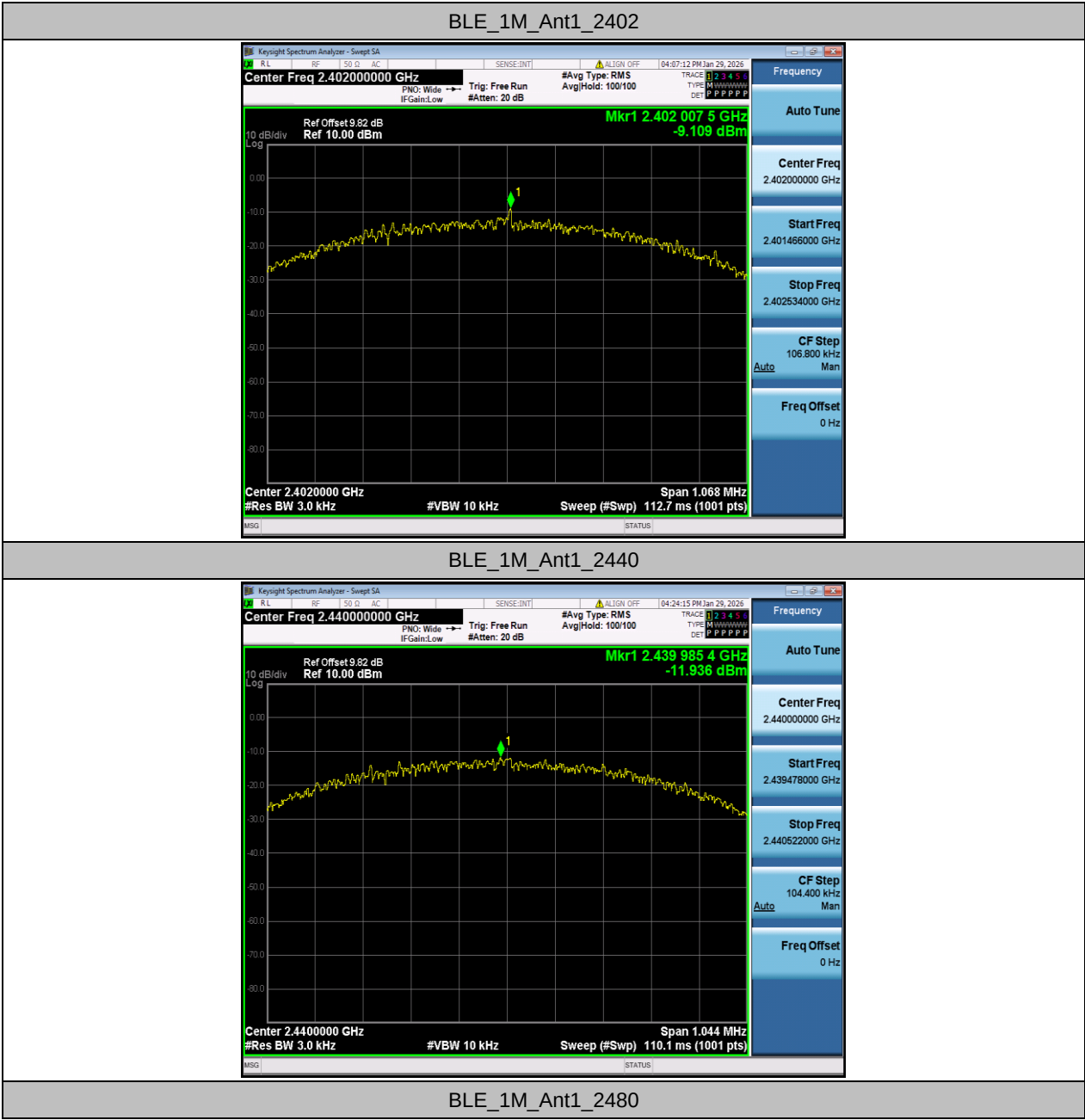
TestMode	Antenna	Freq[MHz]	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
BLE_1M	Ant1	2402	4.75	≤30	PASS
		2440	4.53	≤30	PASS
		2480	4.54	≤30	PASS
BLE_2M	Ant1	2402	4.85	≤30	PASS
		2440	4.93	≤30	PASS
		2480	4.94	≤30	PASS

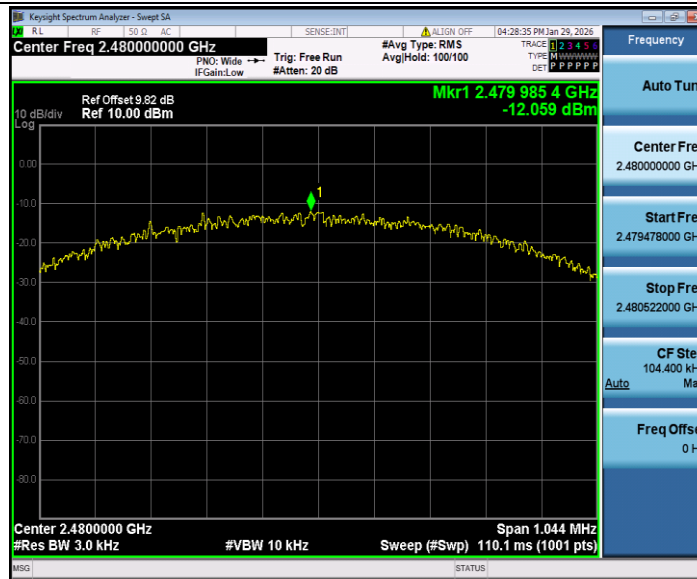
Appendix D: Maximum power spectral density

Test Result

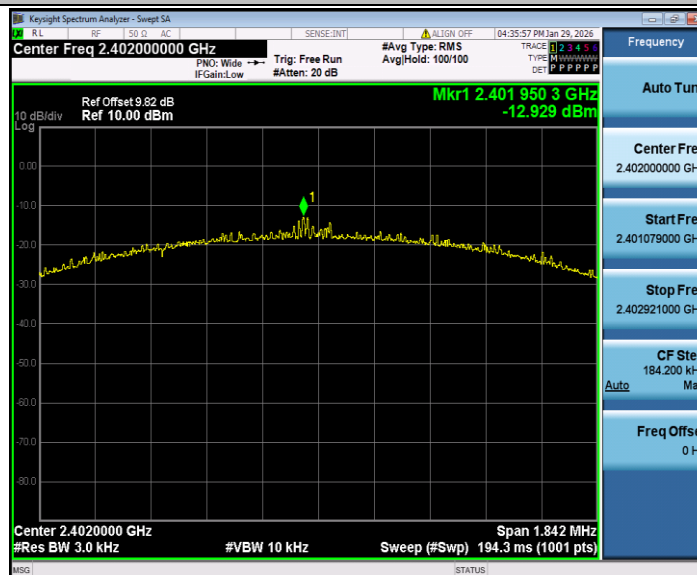
TestMode	Antenna	Freq[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-9.11	≤8.00	PASS
		2440	-11.94	≤8.00	PASS
		2480	-12.06	≤8.00	PASS
BLE_2M	Ant1	2402	-12.93	≤8.00	PASS
		2440	-13.36	≤8.00	PASS
		2480	-13.29	≤8.00	PASS

Test Graphs

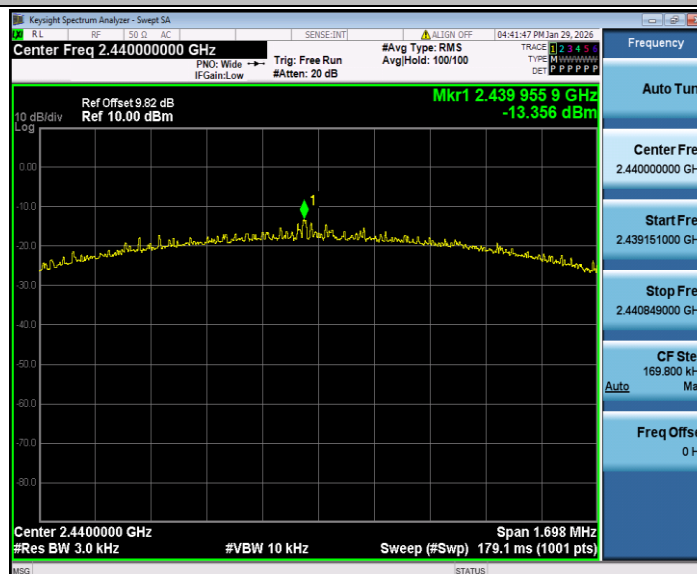




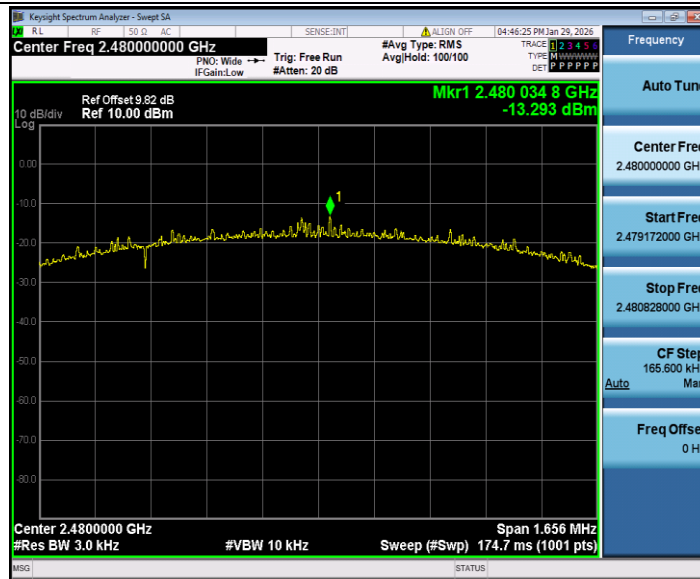
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480

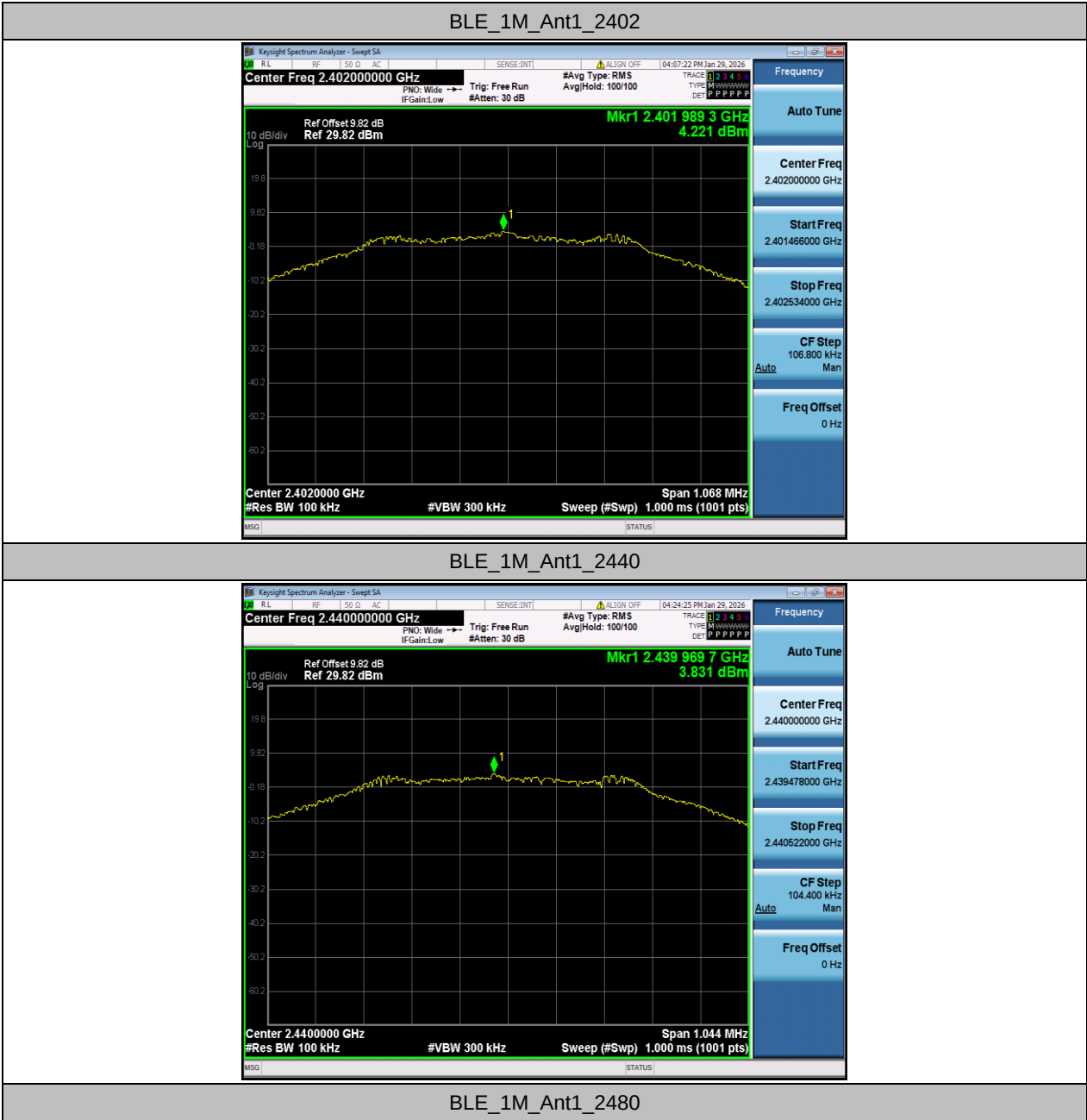


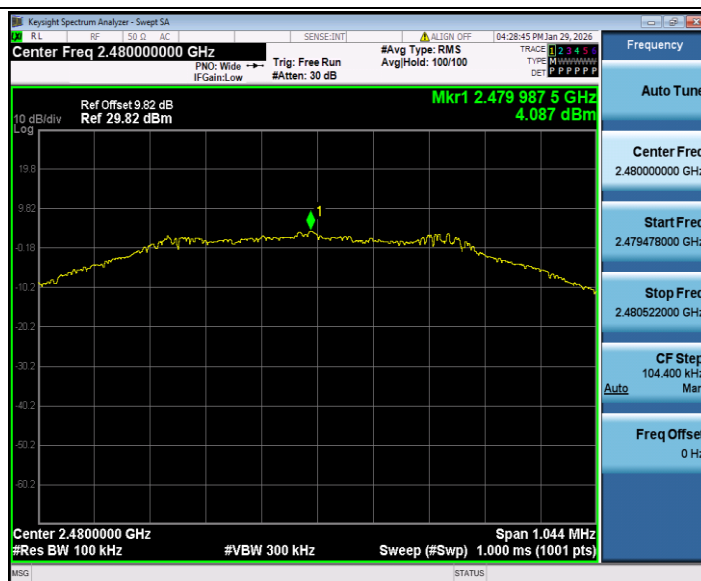
ppendix E: Reference level measurement

Test Result

TestMode	Antenna	Freq[MHz]	Max.Point[MHz]	Result[dBm]
BLE_1M	Ant1	2402	2401.99	4.22
		2440	2439.97	3.83
		2480	2479.99	4.09
BLE_2M	Ant1	2402	2401.99	4.32
		2440	2439.96	3.84
		2480	2479.96	3.61

Test Graphs





BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480

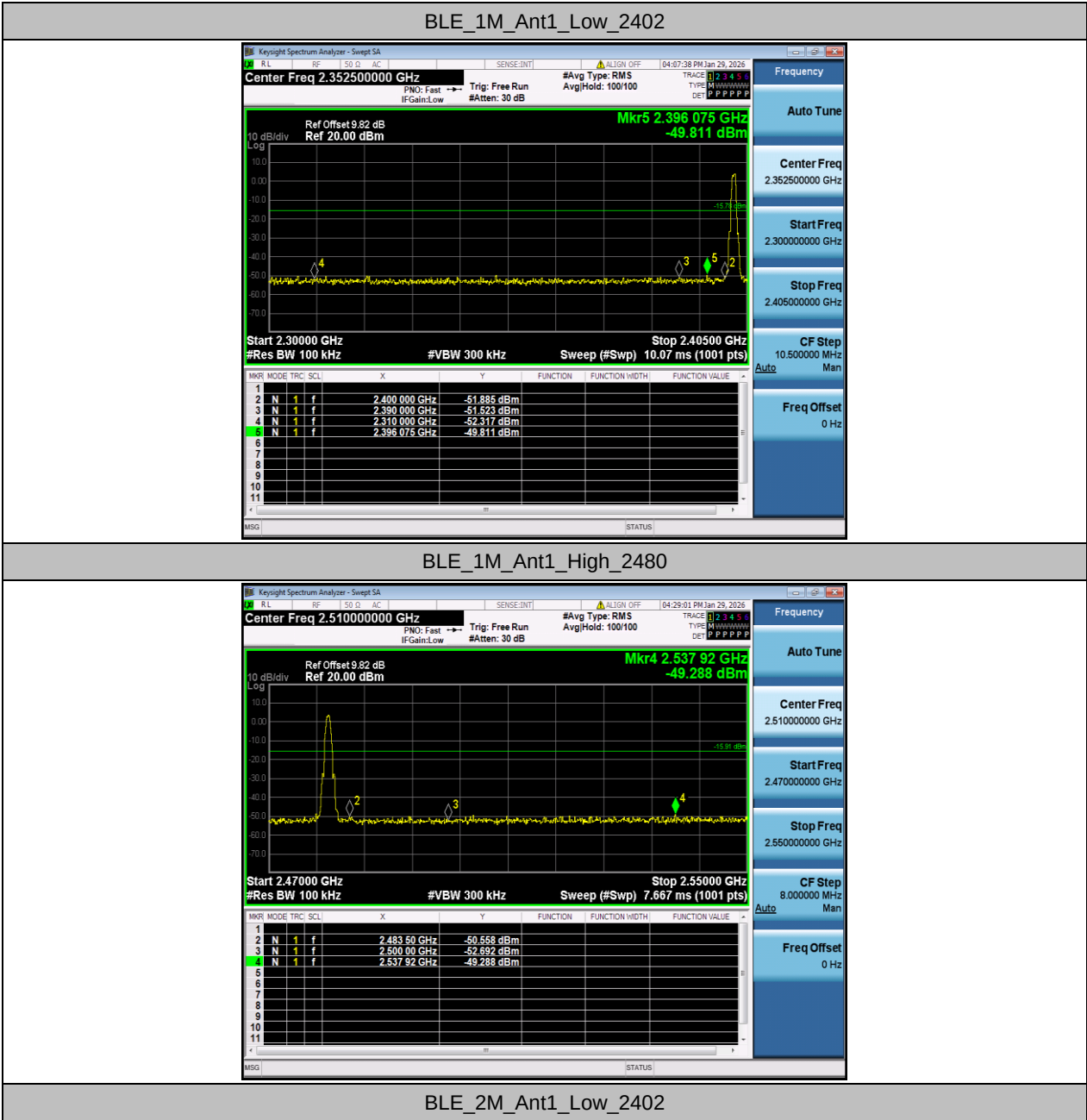


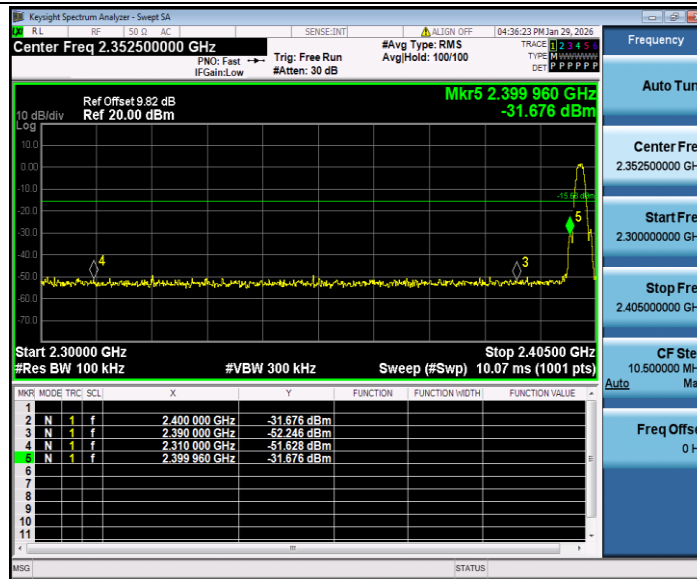
Appendix F: Band edge measurements

Test Result

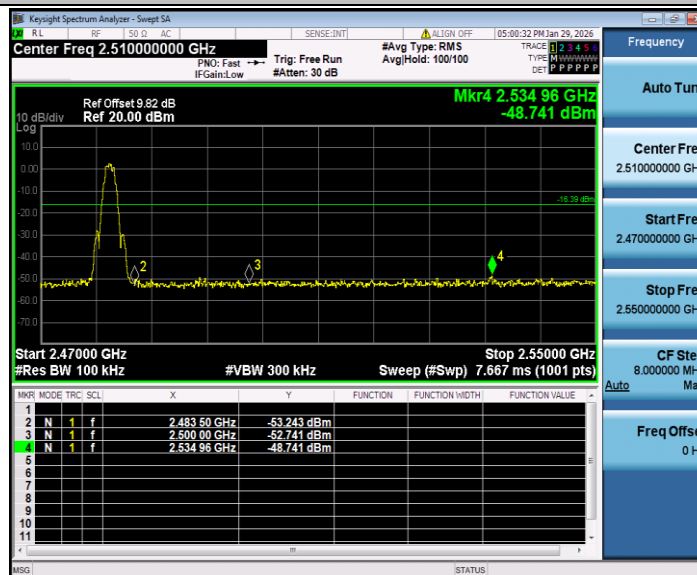
TestMode	Antenna	ChName	Freq[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	4.22	-49.81	≤-15.78	PASS
		High	2480	4.09	-49.29	≤-15.91	PASS
BLE_2M	Ant1	Low	2402	4.32	-31.68	≤-15.68	PASS
		High	2480	3.61	-48.74	≤-16.39	PASS

Test Graphs





BLE_2M_Ant1_High_2480

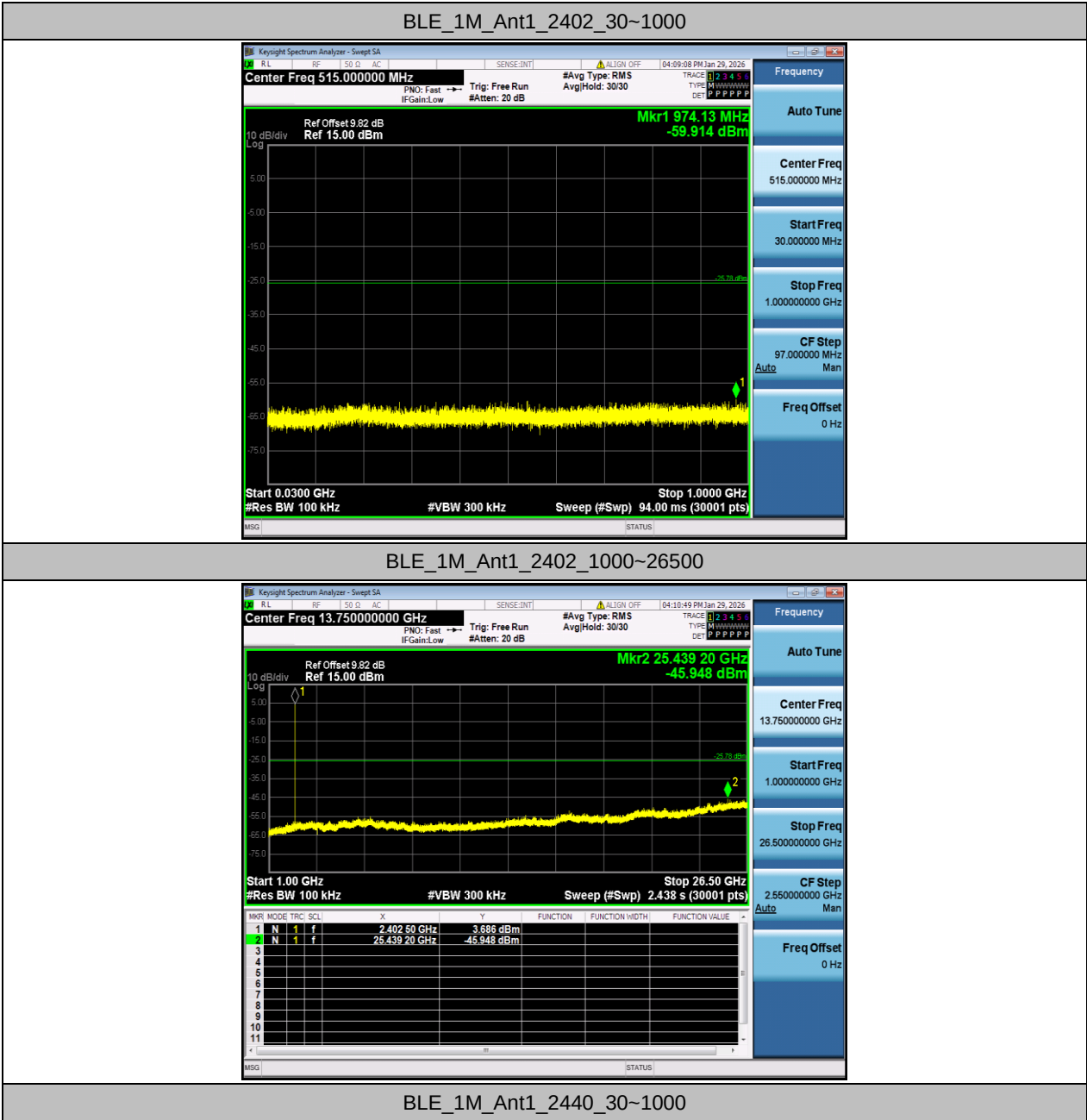


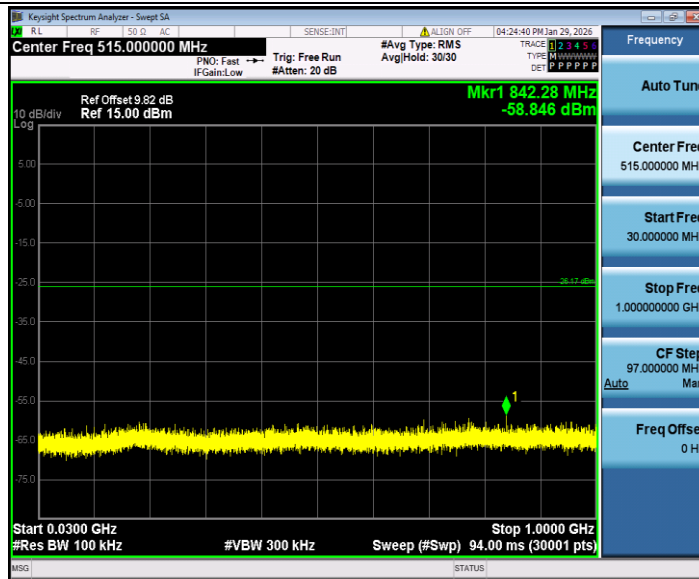
Appendix G: Conducted Spurious Emission

Test Result

TestMode	Antenna	Freq[MHz]	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	30~1000	4.22	-59.91	≤-25.78	PASS
			1000~26500	4.22	-45.95	≤-25.78	PASS
		2440	30~1000	3.83	-58.85	≤-26.17	PASS
			1000~26500	3.83	-46.64	≤-26.17	PASS
		2480	30~1000	4.09	-59.54	≤-25.91	PASS
			1000~26500	4.09	-45.78	≤-25.91	PASS
BLE_2M	Ant1	2402	30~1000	4.32	-59.37	≤-25.68	PASS
			1000~26500	4.32	-46.55	≤-25.68	PASS
		2440	30~1000	3.84	-59.04	≤-26.16	PASS
			1000~26500	3.84	-46.7	≤-26.16	PASS
		2480	30~1000	1.84	-59.95	≤-28.16	PASS
			1000~26500	1.84	-45.85	≤-28.16	PASS

Test Graphs

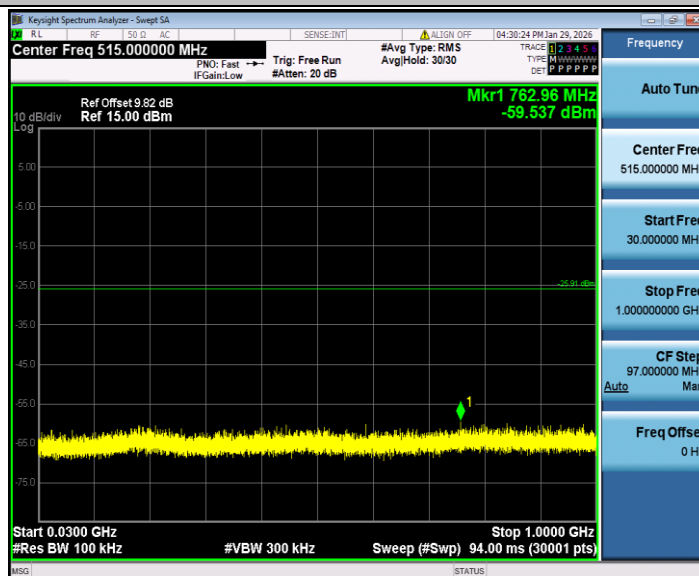




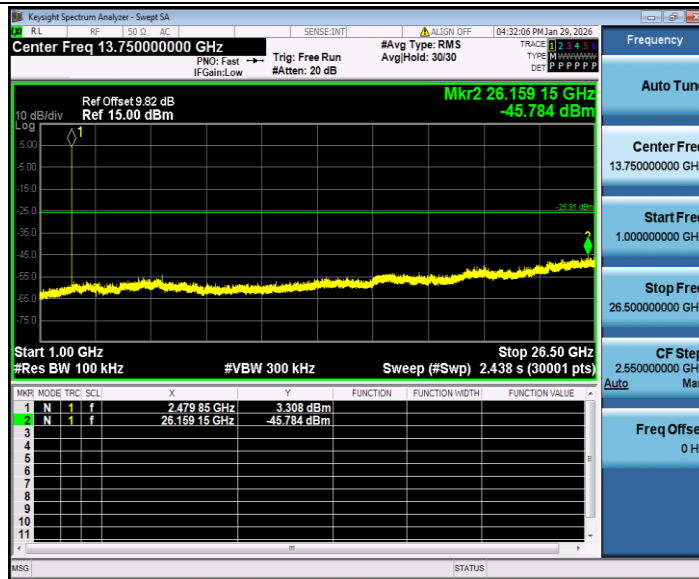
BLE_1M_Ant1_2440_1000~26500



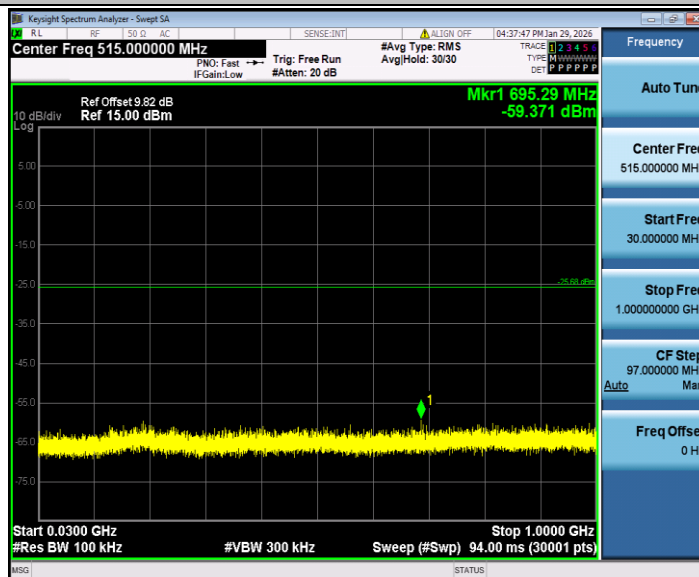
BLE_1M_Ant1_2480_30~1000



BLE_1M_Ant1_2480_1000~26500



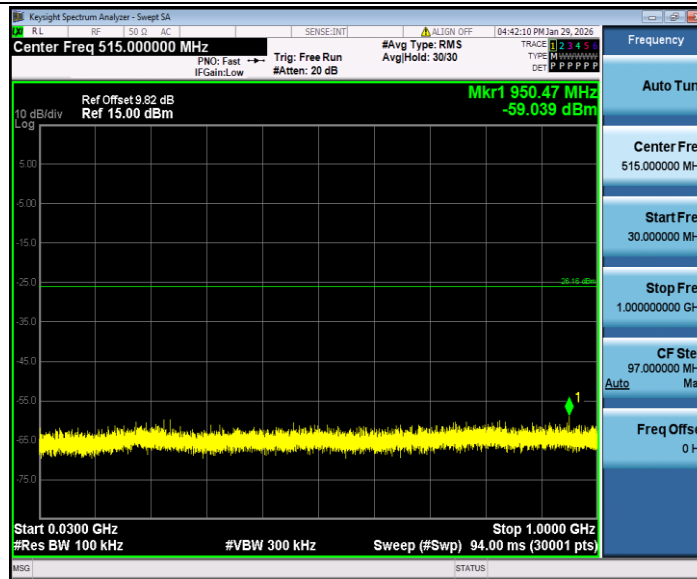
BLE_2M_Ant1_2402_30~1000



BLE_2M_Ant1_2402_1000~26500



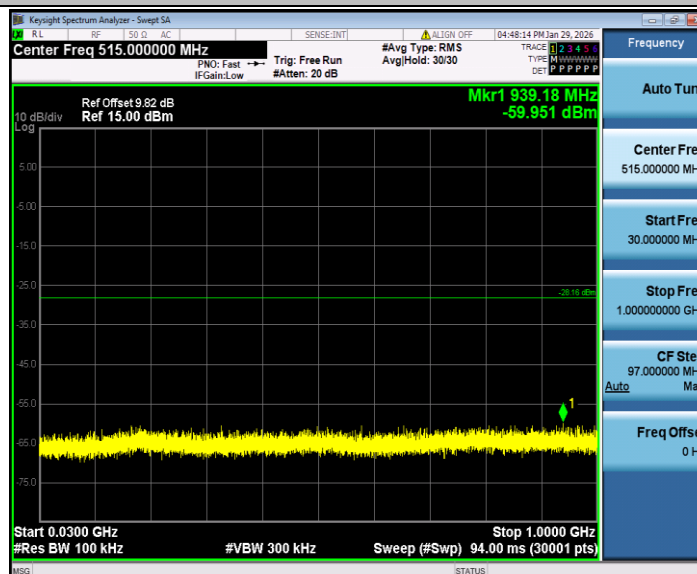
BLE_2M_Ant1_2440_30~1000



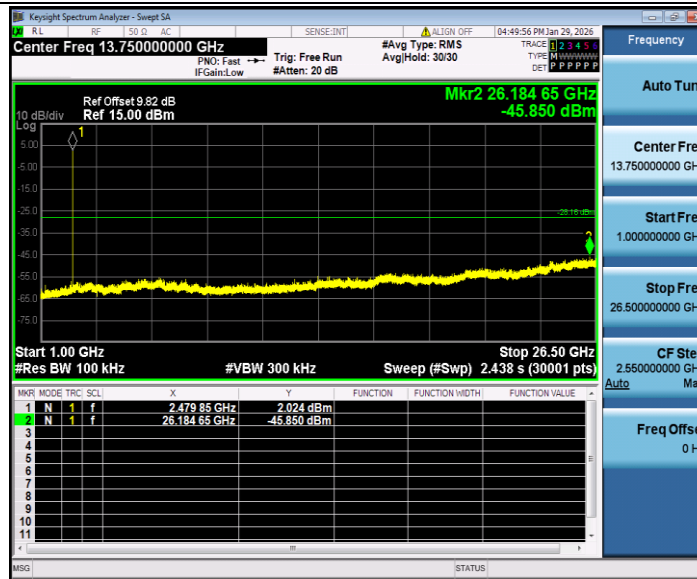
BLE_2M_Ant1_2440_1000~26500



BLE_2M_Ant1_2480_30~1000



BLE_2M_Ant1_2480_1000~26500



Appendix H: Duty Cycle

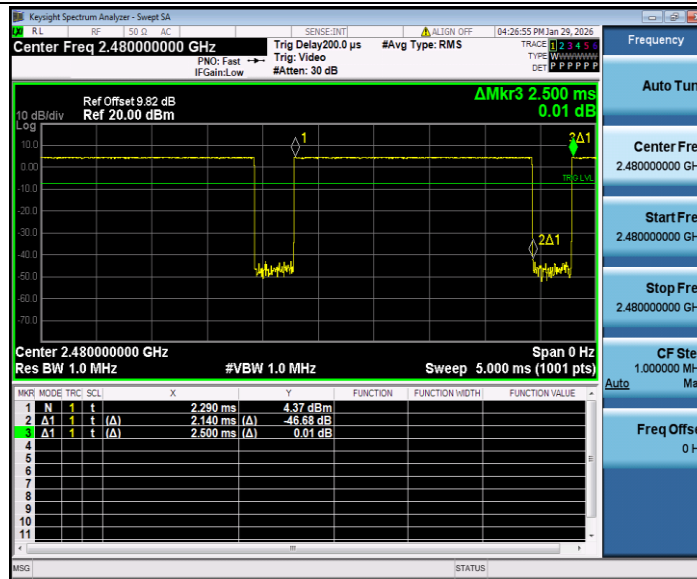
Test Result

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	1.88	57.45	---	---
		2480	1.08	1.88	57.45	---	---

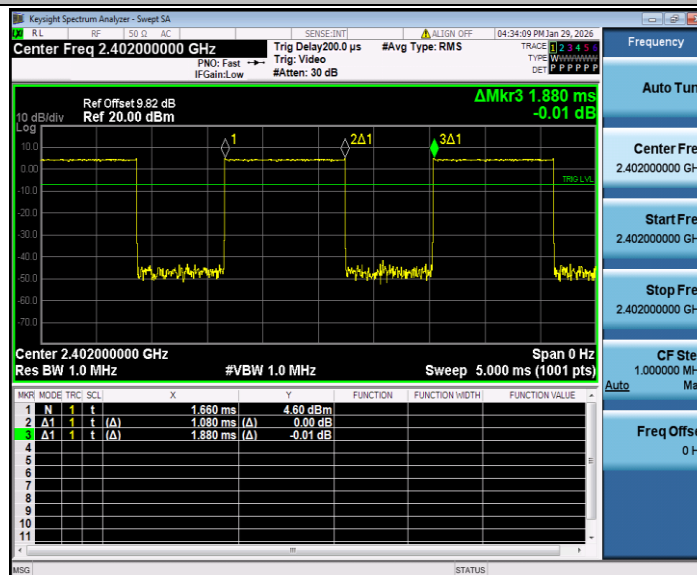
DC=ON Time/Period*100%

Test Graphs

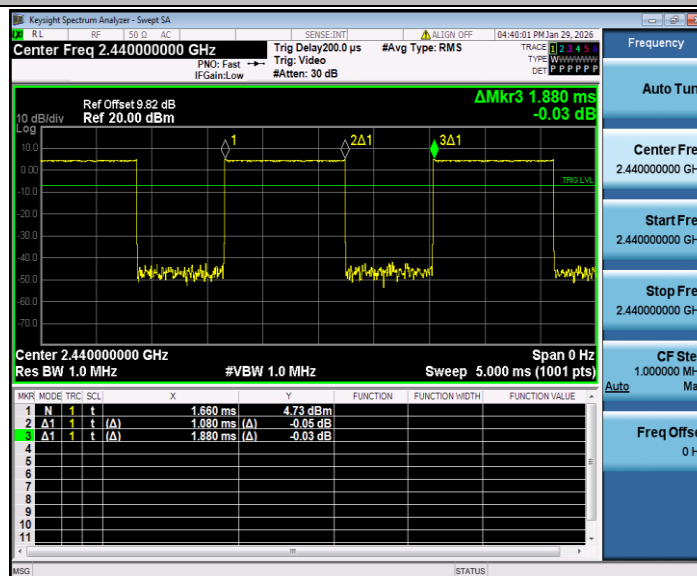




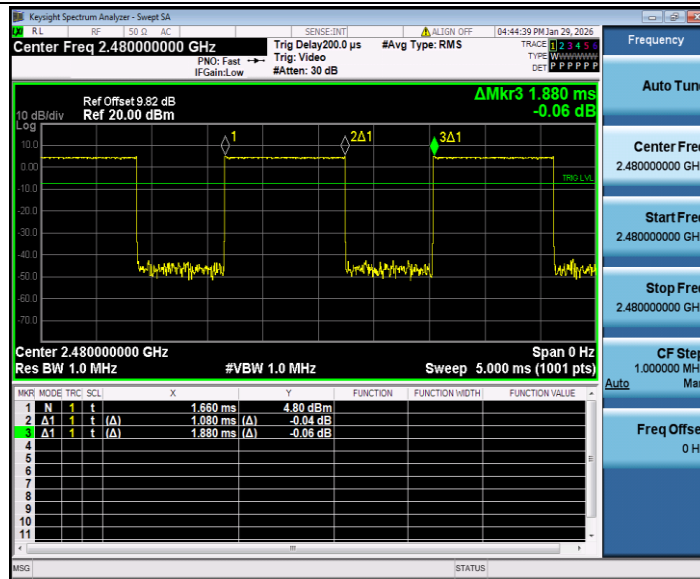
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480



Appendix I: Emissions in Restricted Bands

Test Result

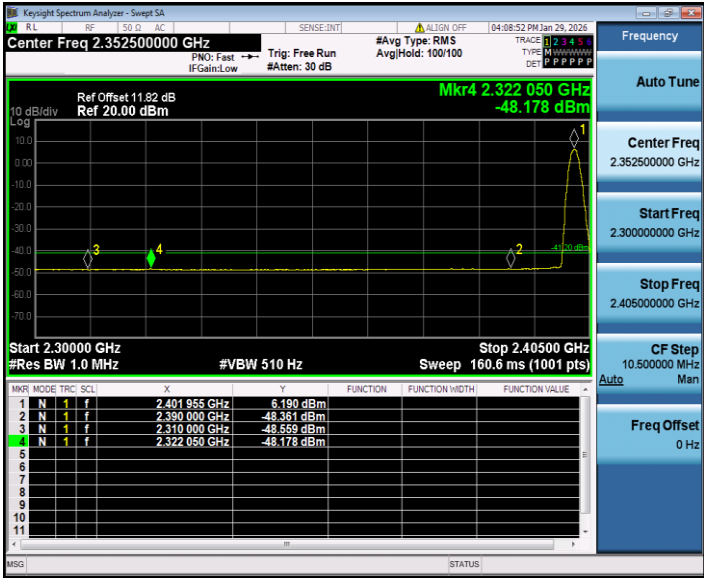
TestMode	Antenna	ChName	Freq(MHz)	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
BLE_1M	Ant1	Low	2402	AV	2310.000	-48.56	≤-41.20	46.64	≤54	PASS
				AV	2322.050	-48.18	≤-41.20	47.02	≤54	PASS
				AV	2390.000	-48.36	≤-41.20	46.84	≤54	PASS
				Peak	2310.000	-41.64	≤-21.20	53.56	≤74	PASS
				Peak	2374.655	-38.76	≤-21.20	56.44	≤74	PASS
				Peak	2390.000	-43.03	≤-21.20	52.17	≤74	PASS
		High	2480	AV	2483.500	-46.28	≤-41.20	48.92	≤54	PASS
				AV	2483.520	-46.28	≤-41.20	48.92	≤54	PASS
				AV	2500.000	-47.92	≤-41.20	47.28	≤54	PASS
				Peak	2483.500	-39.3	≤-21.20	55.90	≤74	PASS
				Peak	2498.080	-38.2	≤-21.20	57.00	≤74	PASS
				Peak	2500.000	-40.12	≤-21.20	55.08	≤74	PASS
BLE_2M	Ant1	Low	2402	AV	2310.000	-48.47	≤-41.20	46.73	≤54	PASS
				AV	2388.410	-48	≤-41.20	47.20	≤54	PASS
				AV	2390.000	-48.39	≤-41.20	46.81	≤54	PASS
				Peak	2310.000	-41.91	≤-21.20	53.29	≤74	PASS
				Peak	2349.245	-38.58	≤-21.20	56.62	≤74	PASS
				Peak	2390.000	-40.9	≤-21.20	54.30	≤74	PASS
		High	2480	AV	2483.500	-43.76	≤-41.20	51.44	≤54	PASS
				AV	2483.520	-43.76	≤-41.20	51.44	≤54	PASS
				AV	2500.000	-47.72	≤-41.20	47.48	≤54	PASS
				Peak	2483.500	-38.86	≤-21.20	56.34	≤74	PASS
				Peak	2483.600	-37.44	≤-21.20	57.76	≤74	PASS
				Peak	2500.000	-41.6	≤-21.20	53.60	≤74	PASS

Note:

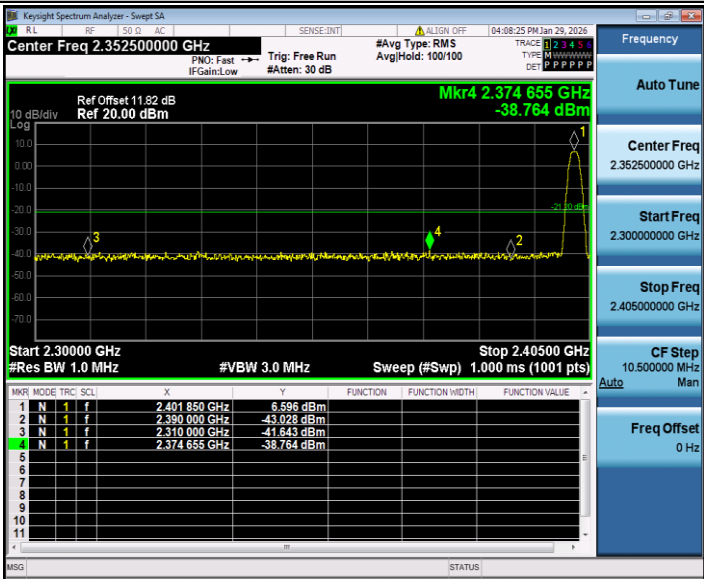
1. The Antenna Gain is compensated in the graph.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

Test Graphs

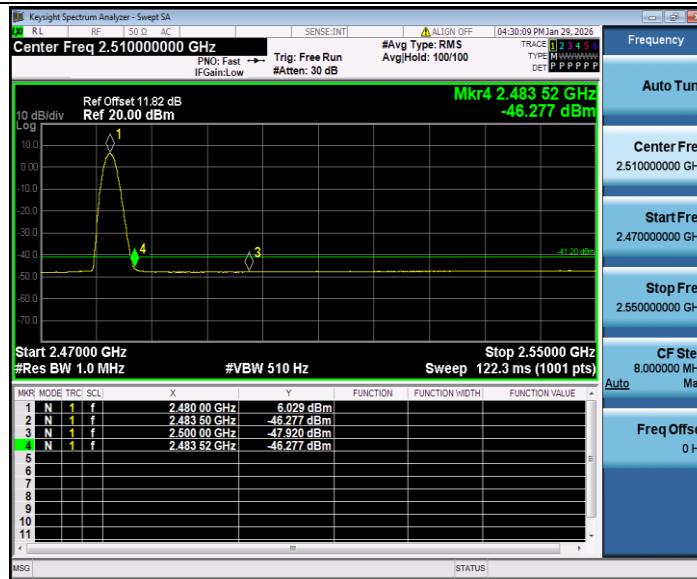
BLE_1M_Ant1_Low_2402_AV



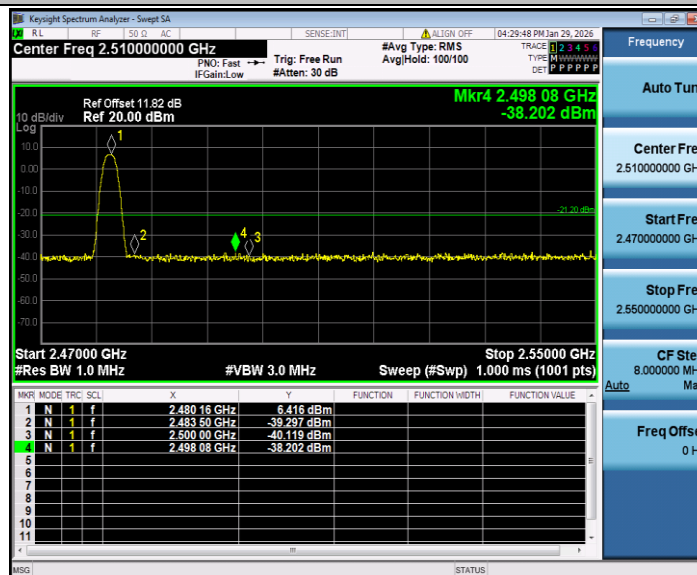
BLE_1M_Ant1_Low_2402_Peak



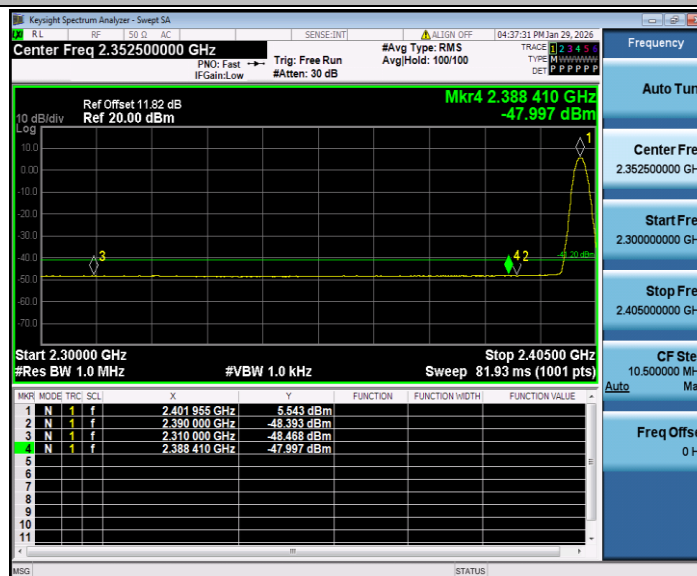
BLE_1M_Ant1_High_2480_AV



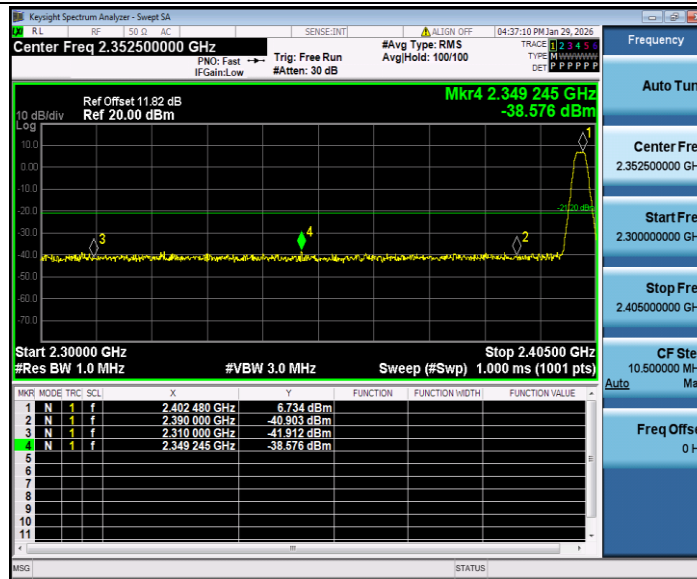
BLE_1M_Ant1_High_2480_Peak



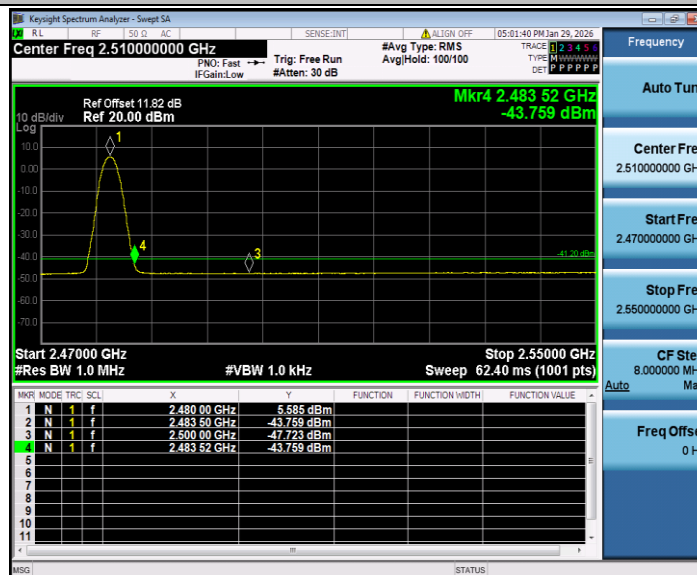
BLE_2M_Ant1_Low_2402_AV



BLE_2M_Ant1_Low_2402_Peak



BLE_2M_Ant1_High_2480_AV



BLE_2M_Ant1_High_2480_Peak

