

FCC Appendix RF Test Data for BLE

FCC ID : 2BPRF-LPP-1-V1

Company : Shenzhen WestMicro Digital Technology Co., Ltd.

EUT : Link Power Pod 1

Model Number : LPP-1-V1

Report No. : CTA26042101301

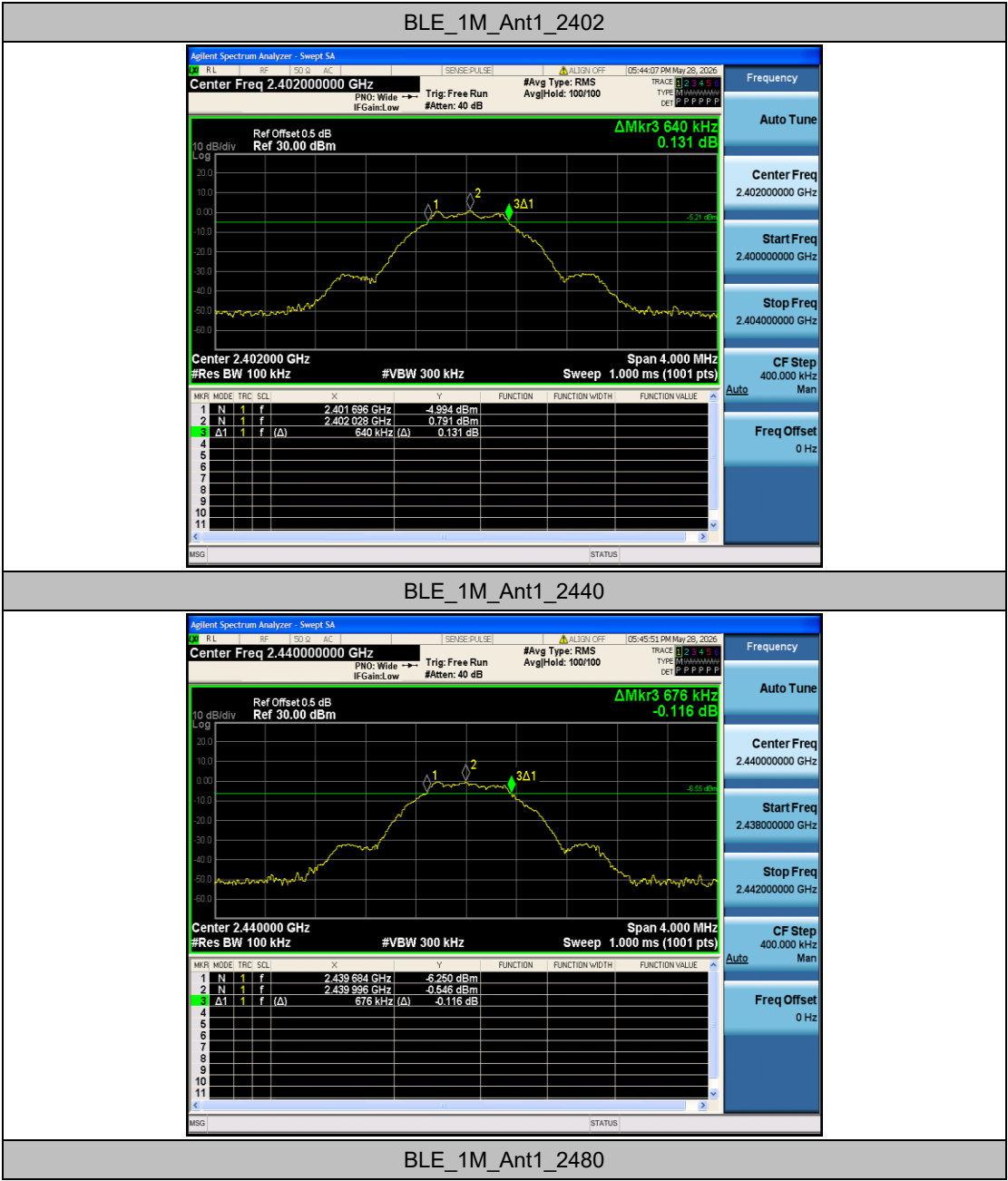
Reviewed By : Eric Wang

Appendix A: DTS Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.640	2401.696	2402.336	0.5	PASS
		2440	0.676	2439.684	2440.360	0.5	PASS
		2480	0.640	2479.696	2480.336	0.5	PASS
BLE_2M	Ant1	2402	1.100	2401.444	2402.544	0.5	PASS
		2440	1.104	2439.448	2440.552	0.5	PASS
		2480	1.112	2479.440	2480.552	0.5	PASS

Test Graphs





BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480

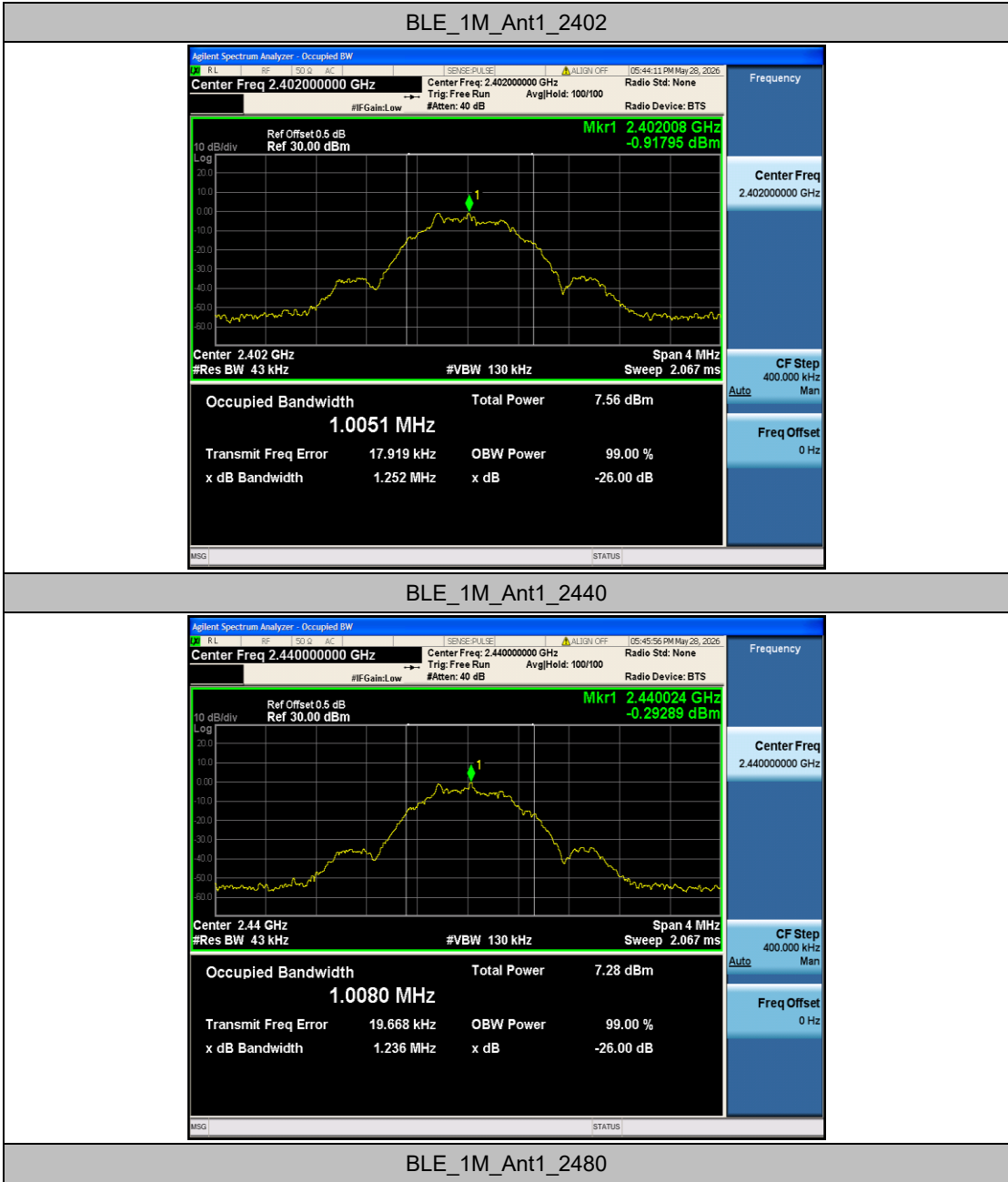


Appendix B: Occupied Channel Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0051	2401.5154	2402.5205	---	---
		2440	1.0080	2439.5157	2440.5237	---	---
		2480	1.0078	2479.5207	2480.5285	---	---
BLE_2M	Ant1	2402	2.0021	2401.0289	2403.0310	---	---
		2440	2.0227	2439.0231	2441.0458	---	---
		2480	2.0056	2479.0329	2481.0385	---	---

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	0.98	≤30	PASS
		2440	0.78	≤30	PASS
		2480	0.79	≤30	PASS
BLE_2M	Ant1	2402	0.93	≤30	PASS
		2440	0.83	≤30	PASS
		2480	0.84	≤30	PASS

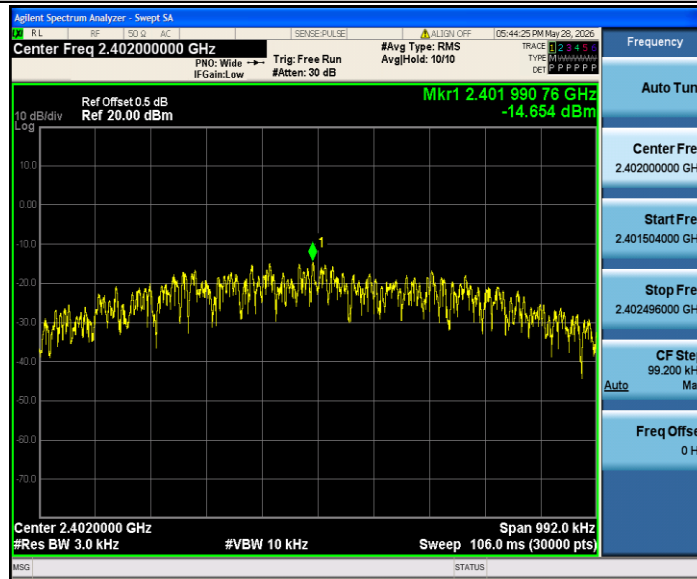
Appendix D: Maximum power spectral density

Test Result

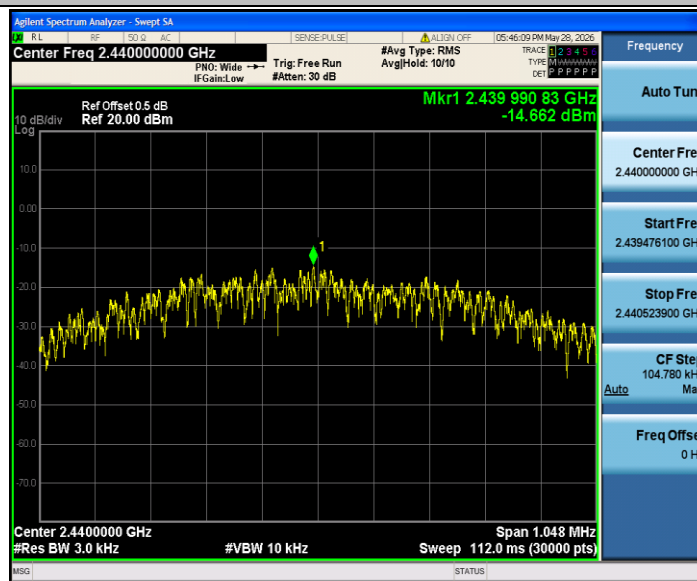
TestMode	Antenna	Freq(MHz)	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-14.65	≤8.00	PASS
		2440	-14.66	≤8.00	PASS
		2480	-14.75	≤8.00	PASS
BLE_2M	Ant1	2402	-16.57	≤8.00	PASS
		2440	-16.66	≤8.00	PASS
		2480	-16.64	≤8.00	PASS

Test Graphs

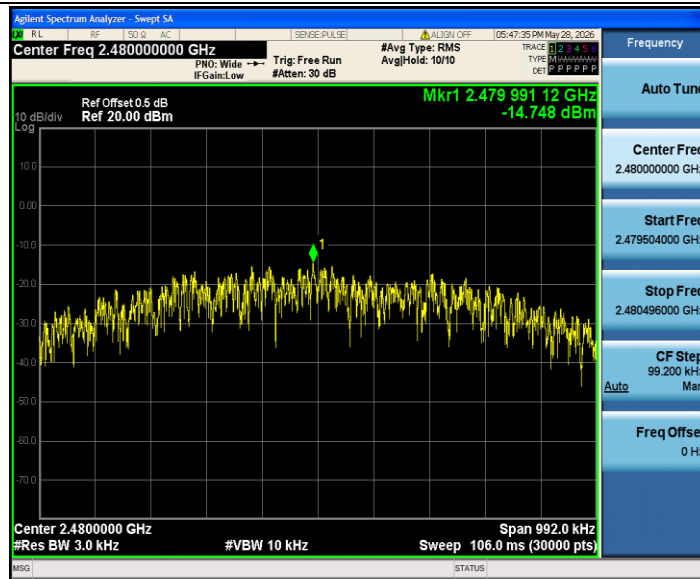
BLE_1M_Ant1_2402



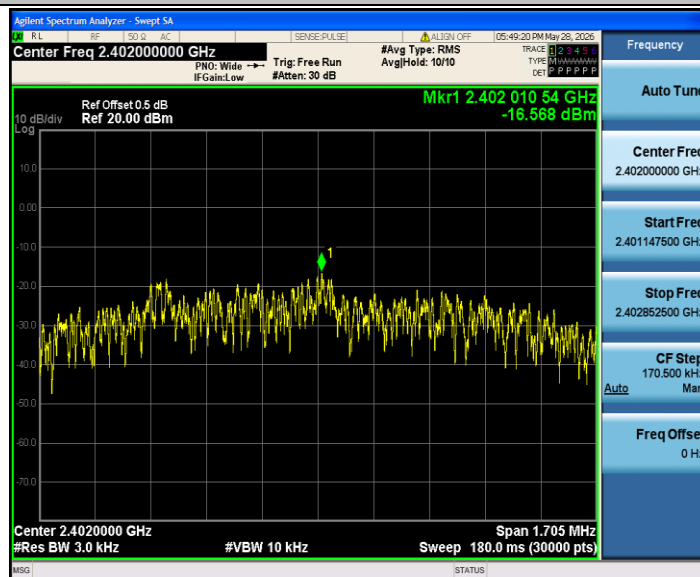
BLE_1M_Ant1_2440



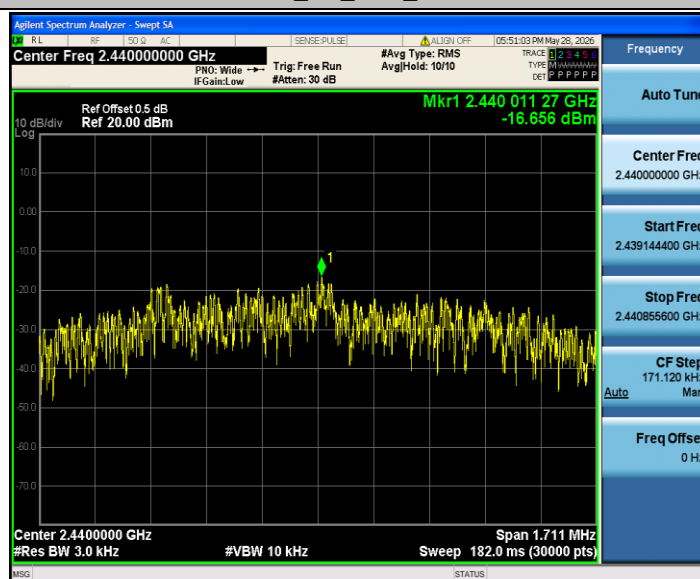
BLE_1M_Ant1_2480



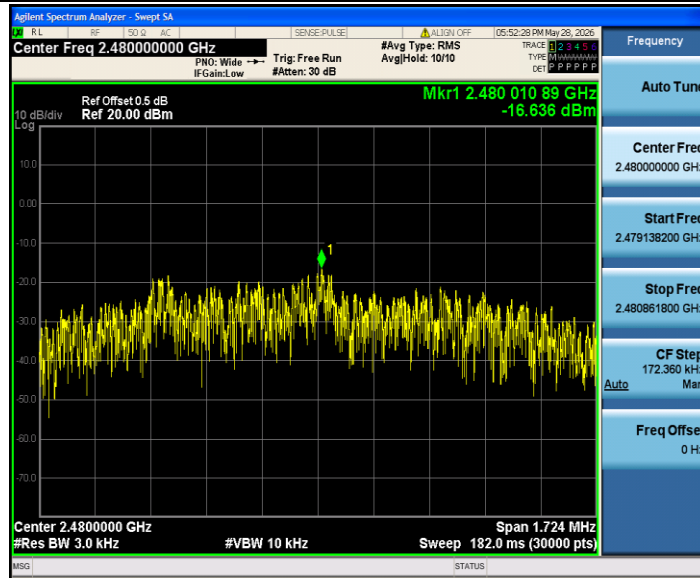
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480

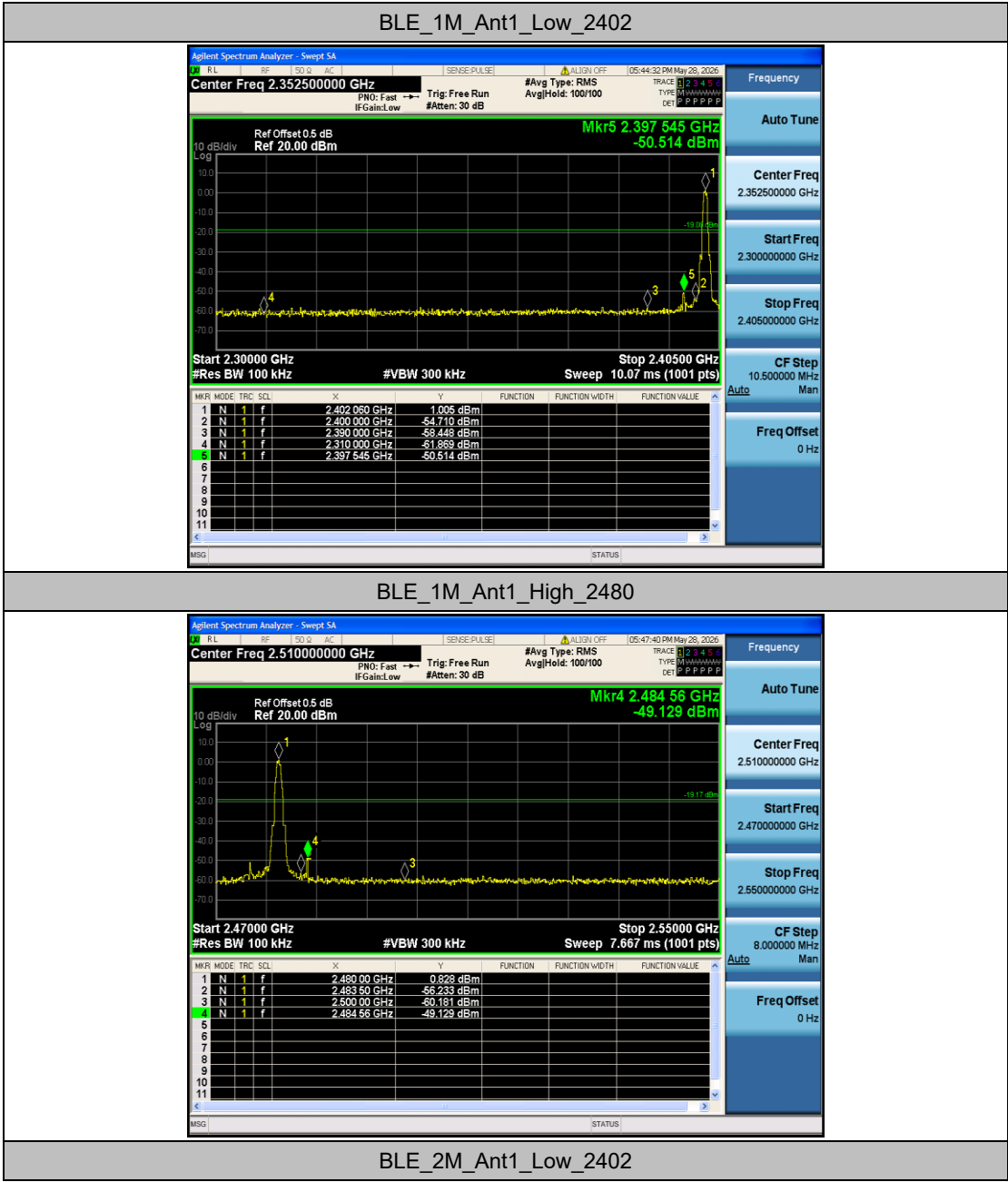


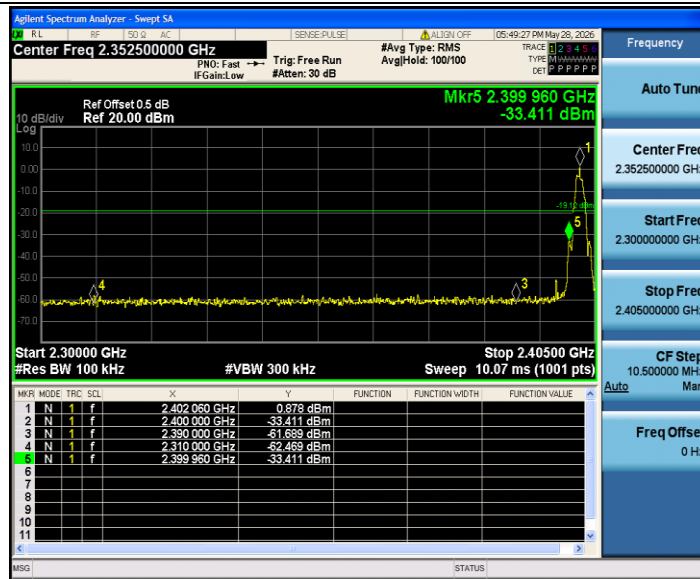
Appendix E: Band edge measurements

Test Result

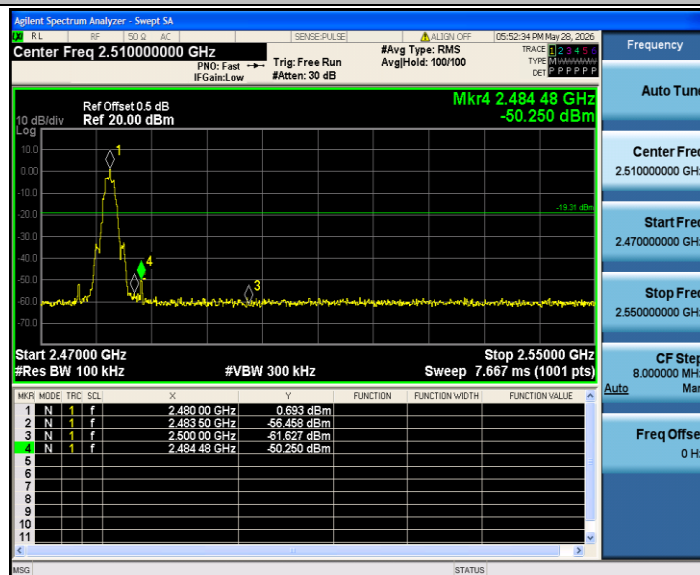
TestMode	Antenna	Channel	Freq(MHz)	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	1.01	-50.51	≤-19	PASS
		High	2480	0.83	-49.13	≤-19.17	PASS
BLE_2M	Ant1	Low	2402	0.88	-33.41	≤-19.12	PASS
		High	2480	0.69	-50.25	≤-19.31	PASS

Test Graphs





BLE_2M_Ant1_High_2480

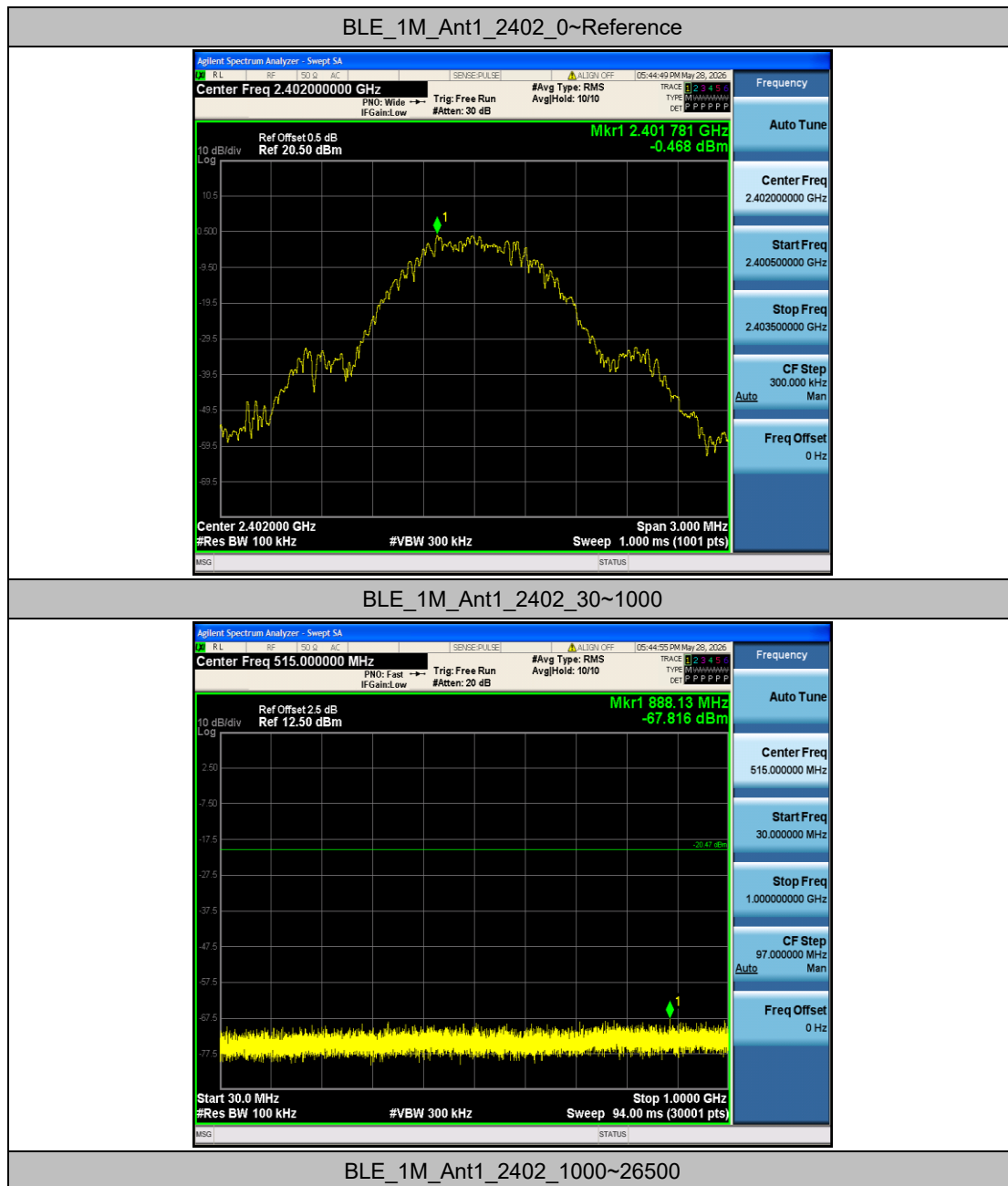


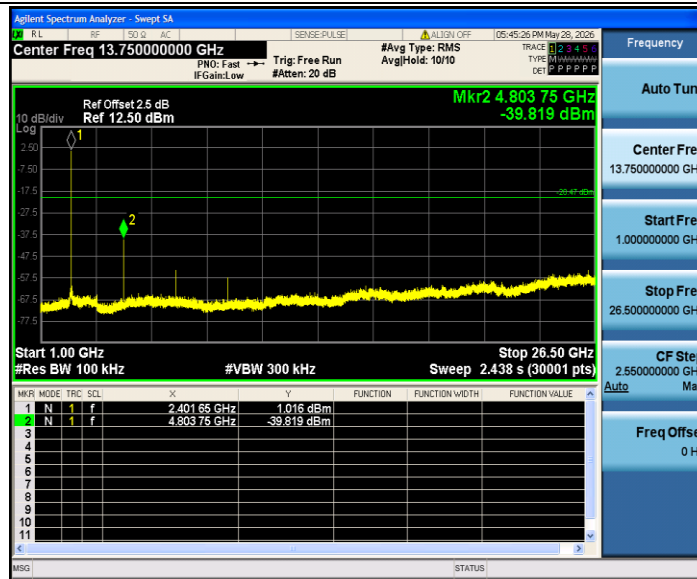
Appendix F: Conducted Spurious Emission

Test Result

TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	-0.47	-0.47	---	PASS
			30~1000	-0.47	-67.82	≤-20.47	PASS
			1000~26500	-0.47	-39.82	≤-20.47	PASS
		2440	Reference	-0.19	-0.19	---	PASS
			30~1000	-0.19	-67.85	≤-20.19	PASS
			1000~26500	-0.19	-45.44	≤-20.19	PASS
		2480	Reference	-0.51	-0.51	---	PASS
			30~1000	-0.51	-67.75	≤-20.51	PASS
			1000~26500	-0.51	-46.17	≤-20.51	PASS
BLE_2M	Ant1	2402	Reference	0.38	0.38	---	PASS
			30~1000	0.38	-67.36	≤-19.62	PASS
			1000~26500	0.38	-44.33	≤-19.62	PASS
		2440	Reference	-1.95	-1.95	---	PASS
			30~1000	-1.95	-67.27	≤-21.95	PASS
			1000~26500	-1.95	-46.27	≤-21.95	PASS
		2480	Reference	0.31	0.31	---	PASS
			30~1000	0.31	-67.38	≤-19.69	PASS
			1000~26500	0.31	-48.12	≤-19.69	PASS

Test Graphs

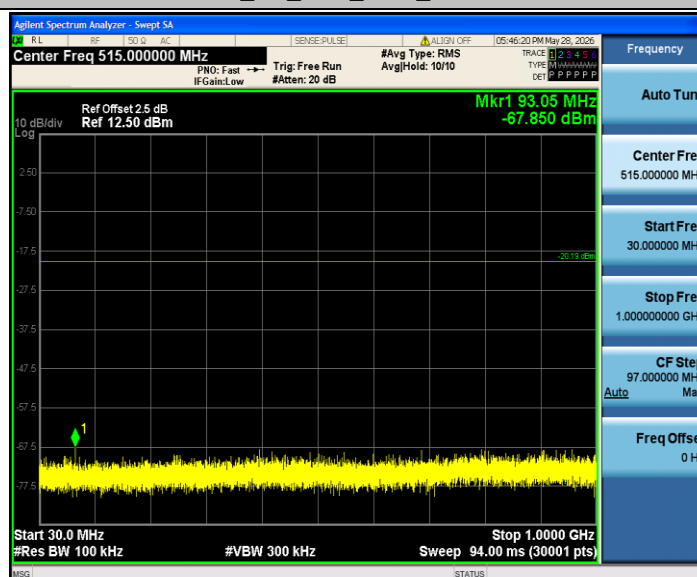




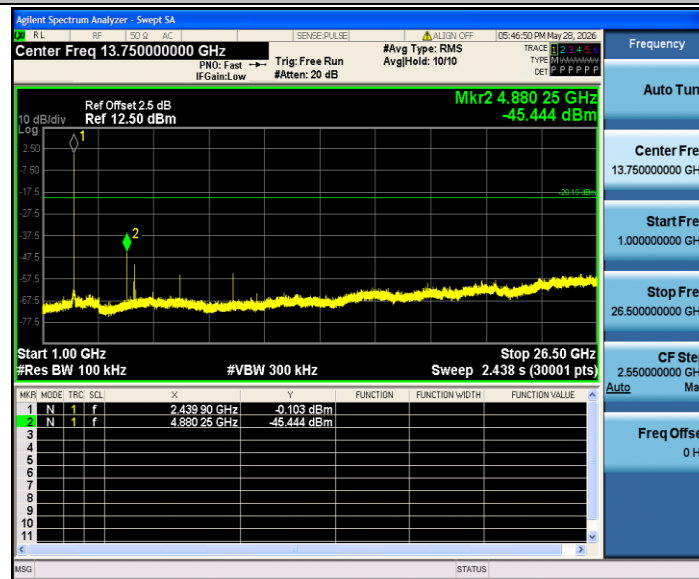
BLE_1M_Ant1_2440_0~Reference



BLE_1M_Ant1_2440_30~1000



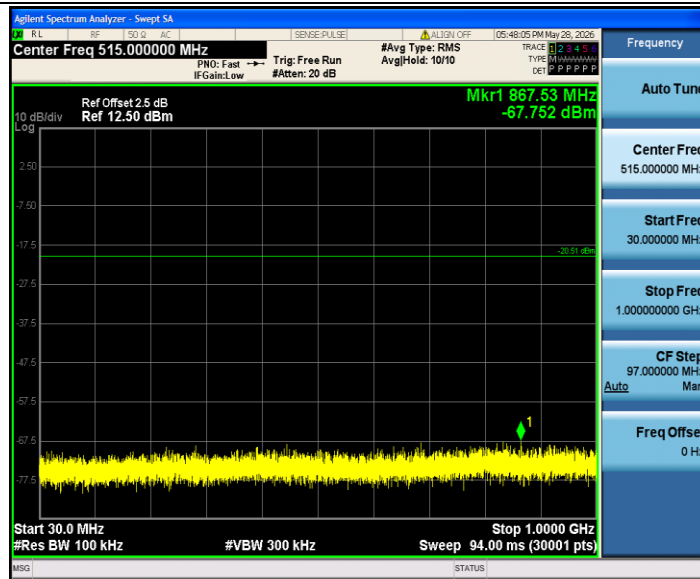
BLE_1M_Ant1_2440_1000~26500



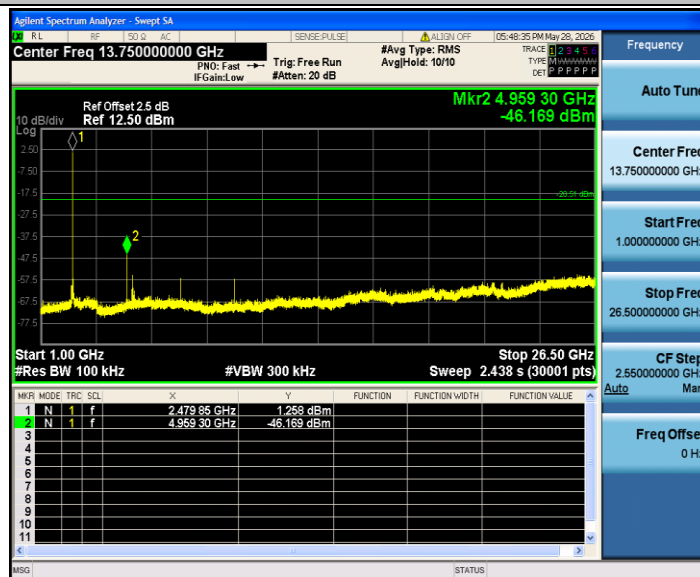
BLE_1M_Ant1_2480_0~Reference



BLE_1M_Ant1_2480_30~1000



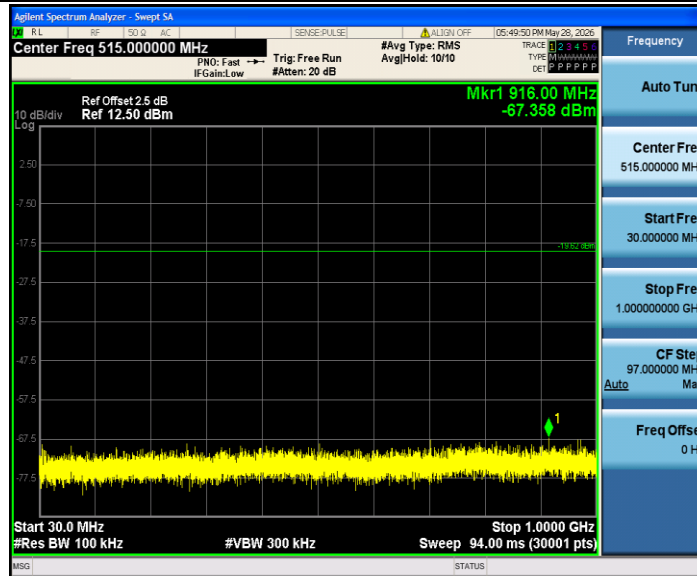
BLE_1M_Ant1_2480_1000~26500



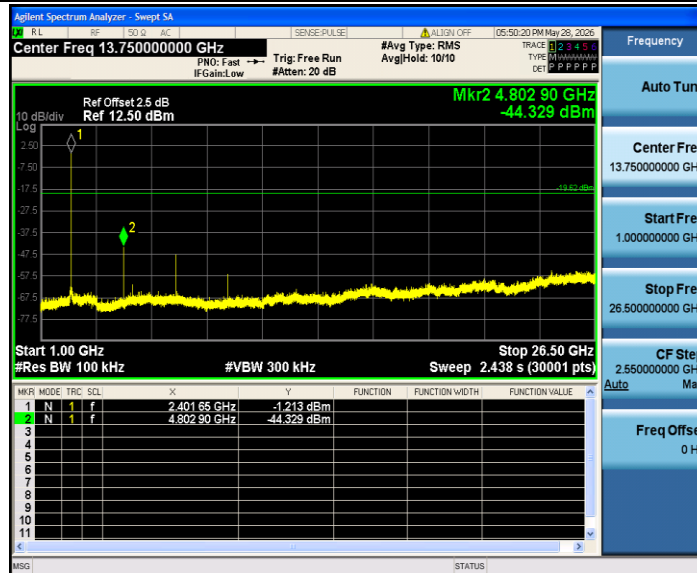
BLE_2M_Ant1_2402_0~Reference



BLE_2M_Ant1_2402_30~1000



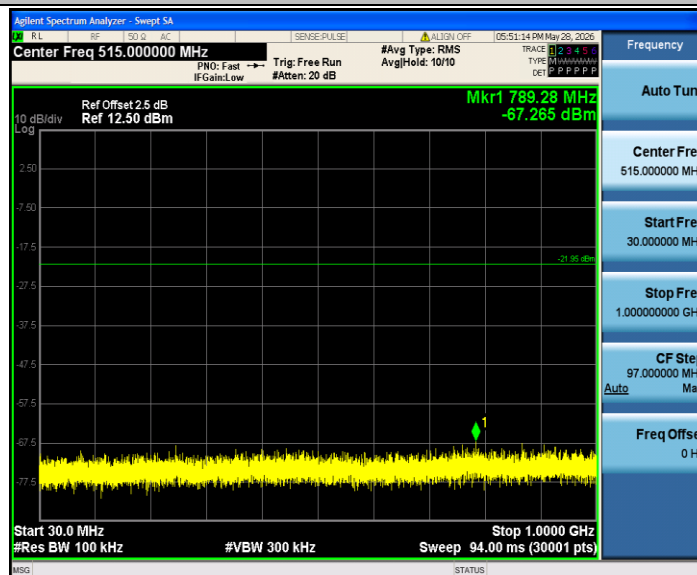
BLE_2M_Ant1_2402_1000~26500



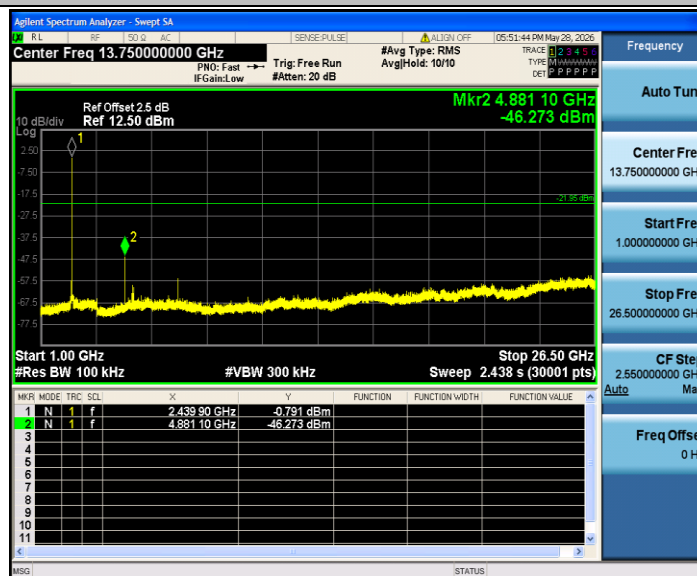
BLE_2M_Ant1_2440_0~Reference



BLE_2M_Ant1_2440_30~1000



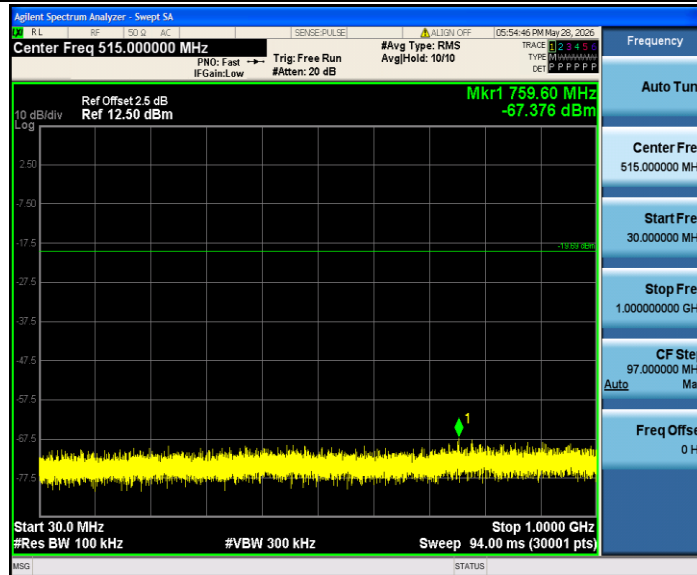
BLE_2M_Ant1_2440_1000~26500



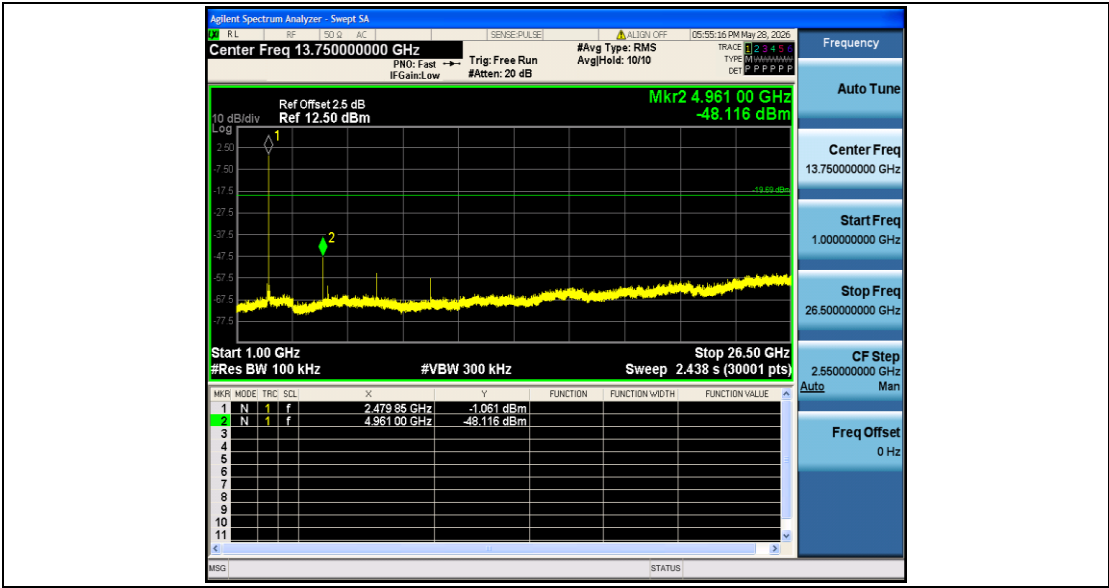
BLE_2M_Ant1_2480_0~Reference



BLE_2M_Ant1_2480_30~1000



BLE_2M_Ant1_2480_1000~26500



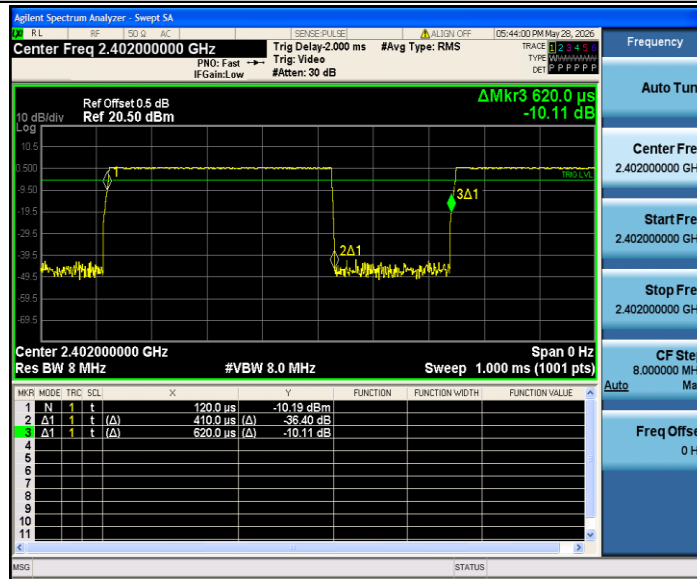
Appendix G: Duty Cycle

Test Result

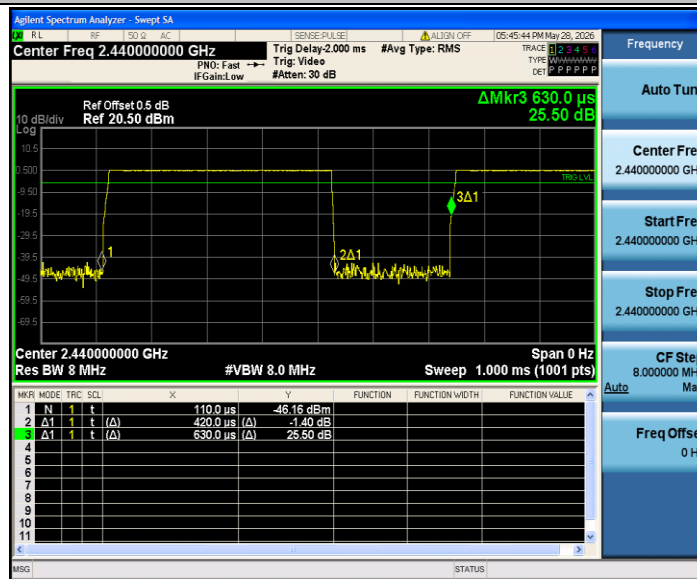
TestMode	Antenna	Freq(MHz)	ON Time [ms]	Period [ms]	X	DC [%]	xFactor	Limit	Verdict
BLE_1M	Ant1	2402	0.41	0.62	0.6613	66.13	1.80	---	---
		2440	0.42	0.63	0.6667	66.67	1.76	---	---
		2480	0.41	0.62	0.6613	66.13	1.80	---	---
BLE_2M	Ant1	2402	0.22	0.62	0.3548	35.48	4.50	---	---
		2440	0.23	0.63	0.3651	36.51	4.38	---	---
		2480	0.23	0.63	0.3651	36.51	4.38	---	---

Test Graphs

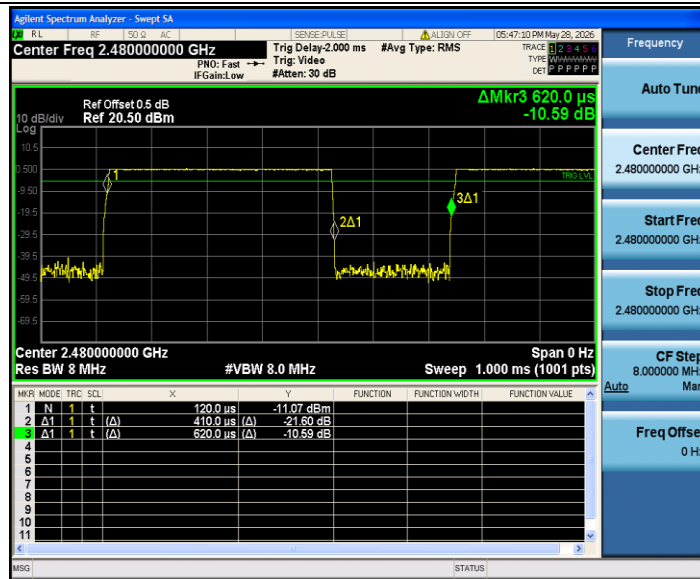
BLE_1M_Ant1_2402



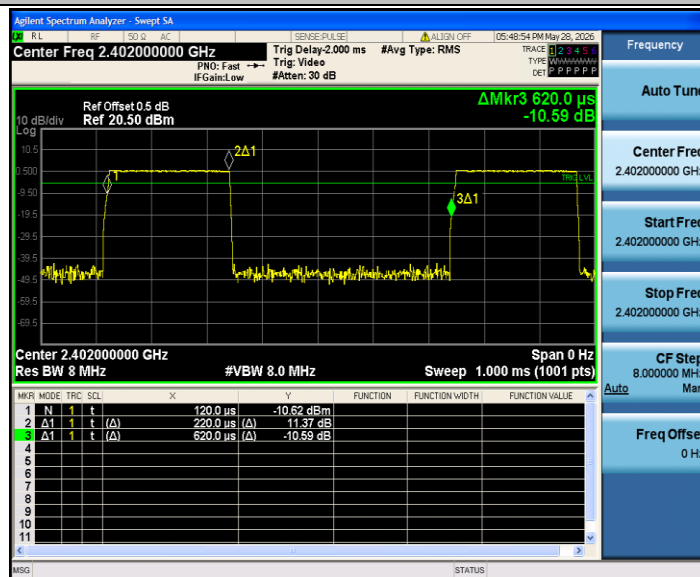
BLE_1M_Ant1_2440



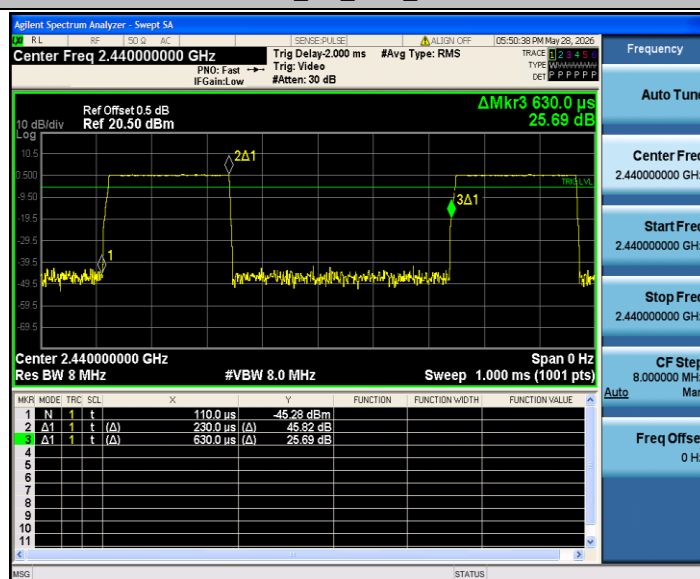
BLE_1M_Ant1_2480



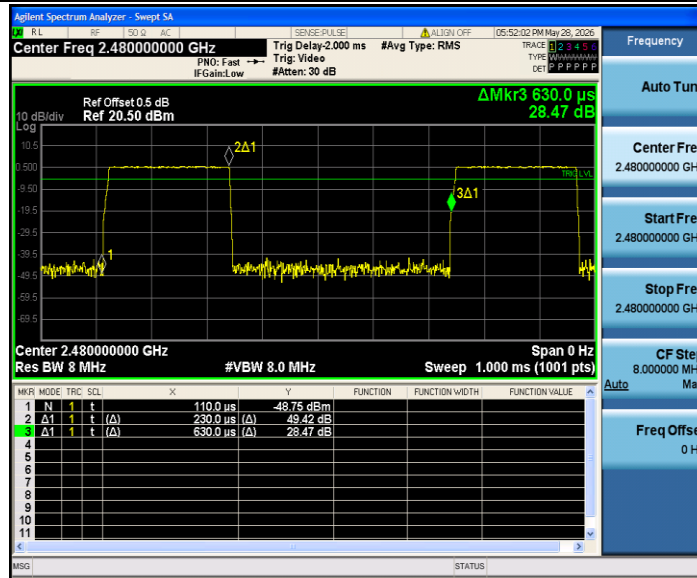
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480



Appendix H: Emissions in Restricted Bands

Test Result

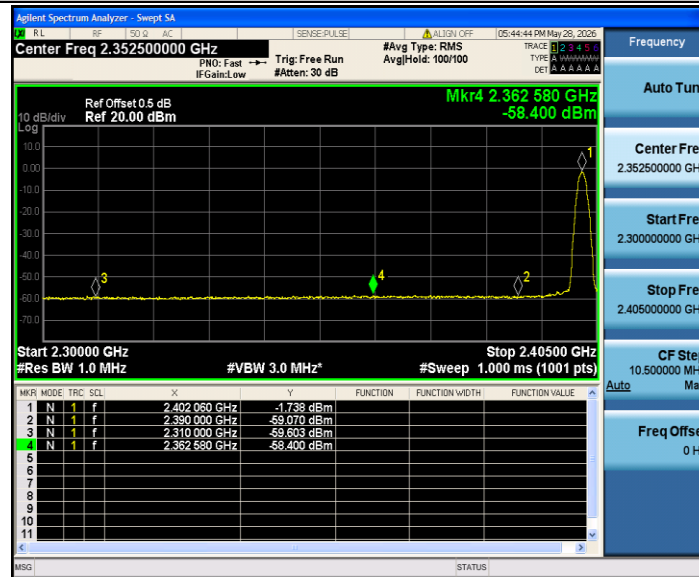
TestMode	Antenna	Channel Name	Freq(MHz)	Detector	Freq [MHz]	Result [dBm]	Gain [dB]	DC Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
BLE_1M	Ant1	Low	2402	AV	2310.000	-59.6	2.58	1.80	39.98	≤54	PASS
				AV	2362.580	-58.4	2.58	1.80	41.18	≤54	PASS
				AV	2390.000	-59.07	2.58	1.80	40.51	≤54	PASS
				Peak	2310.000	-52.64	2.58	0.00	45.14	≤74	PASS
				Peak	2379.905	-47.56	2.58	0.00	50.22	≤74	PASS
				Peak	2390.000	-51.05	2.58	0.00	46.73	≤74	PASS
		High	2480	AV	2483.500	-57.47	2.58	1.80	42.11	≤54	PASS
				AV	2483.920	-56.73	2.58	1.80	42.85	≤54	PASS
				AV	2500.000	-59.23	2.58	1.80	40.35	≤54	PASS
				Peak	2483.500	-46.91	2.58	0.00	50.87	≤74	PASS
				Peak	2484.480	-42.39	2.58	0.00	55.39	≤74	PASS
				Peak	2500.000	-50.4	2.58	0.00	47.38	≤74	PASS
BLE_2M	Ant1	Low	2402	AV	2310.000	-60.52	2.58	4.50	41.76	≤54	PASS
				AV	2388.830	-58.53	2.58	4.50	43.75	≤54	PASS
				AV	2390.000	-58.92	2.58	4.50	43.36	≤54	PASS
				Peak	2310.000	-51.41	2.58	0.00	46.37	≤74	PASS
				Peak	2342.525	-48.52	2.58	0.00	49.26	≤74	PASS
				Peak	2390.000	-50.54	2.58	0.00	47.24	≤74	PASS
		High	2480	AV	2483.500	-57.14	2.58	4.38	45.02	≤54	PASS
				AV	2483.520	-57.14	2.58	4.38	45.02	≤54	PASS
				AV	2500.000	-59.45	2.58	4.38	42.71	≤54	PASS
				Peak	2483.500	-46.96	2.58	0.00	50.82	≤74	PASS
				Peak	2484.800	-43.11	2.58	0.00	54.67	≤74	PASS
				Peak	2500.000	-50.05	2.58	0.00	47.73	≤74	PASS

Note:

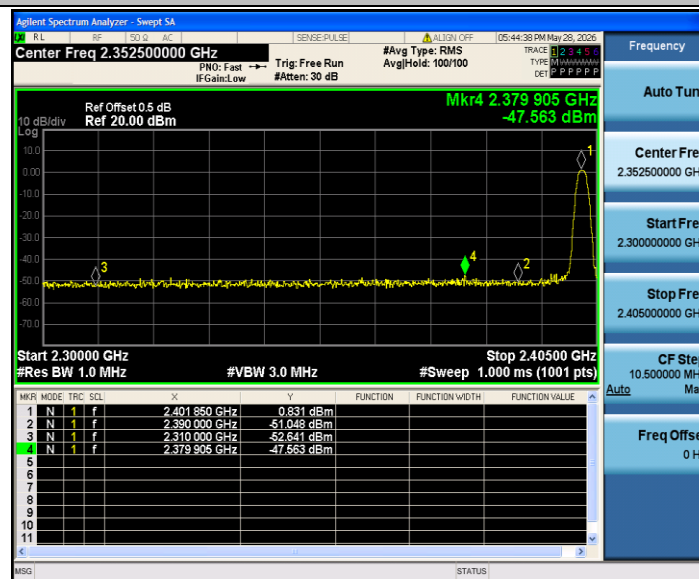
1. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

Test Graphs

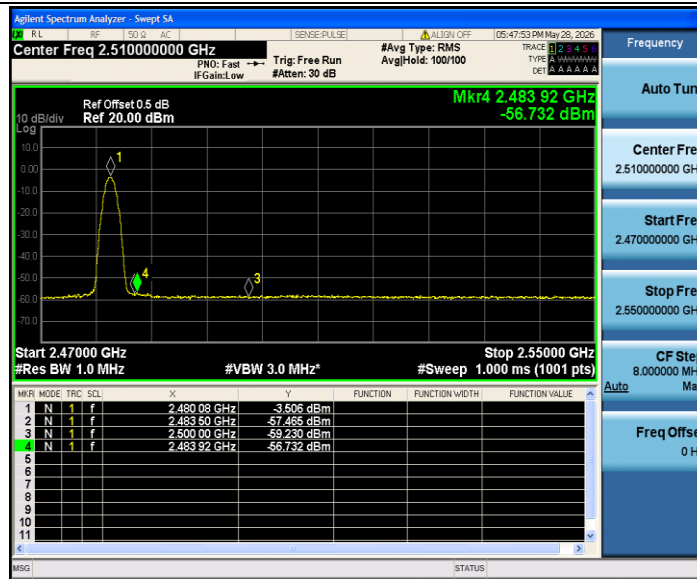
BLE_1M_Ant1_Low_2402_AV



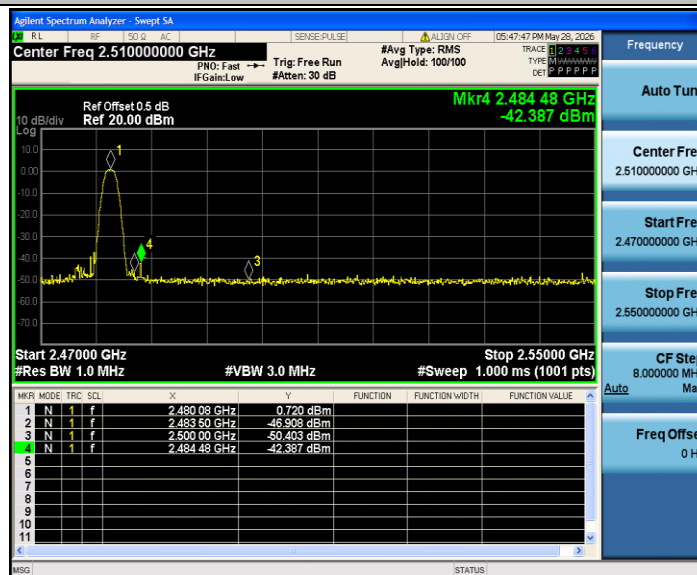
BLE_1M_Ant1_Low_2402_Peak



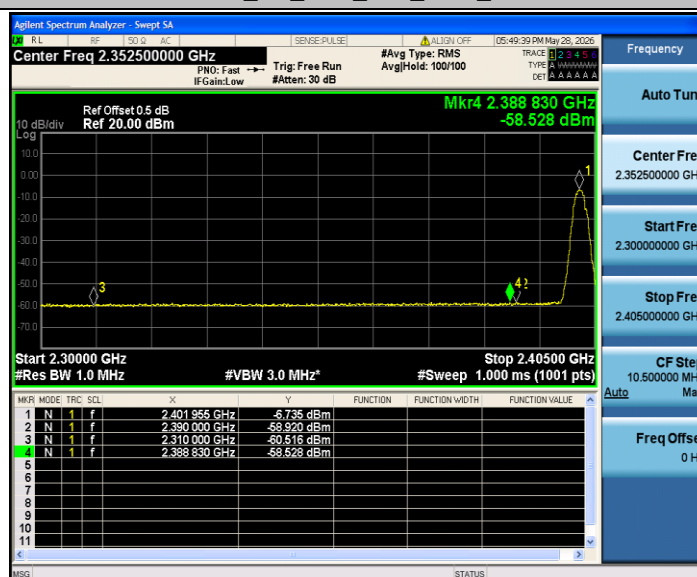
BLE_1M_Ant1_High_2480_AV



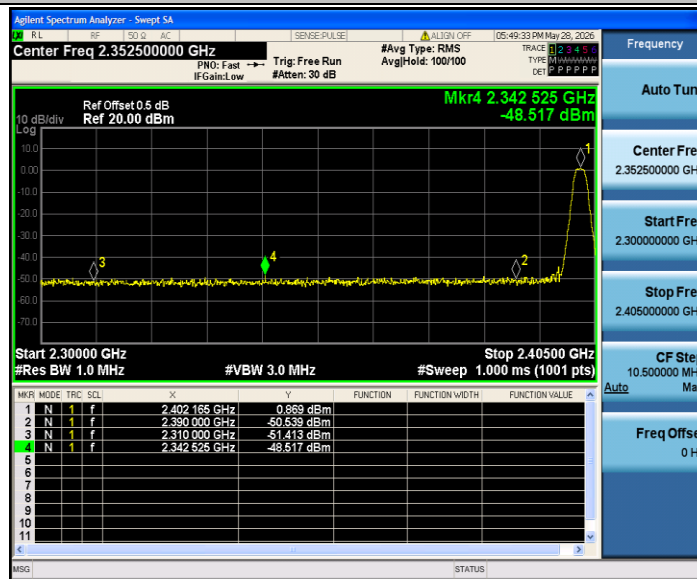
BLE_1M_Ant1_High_2480_Peak



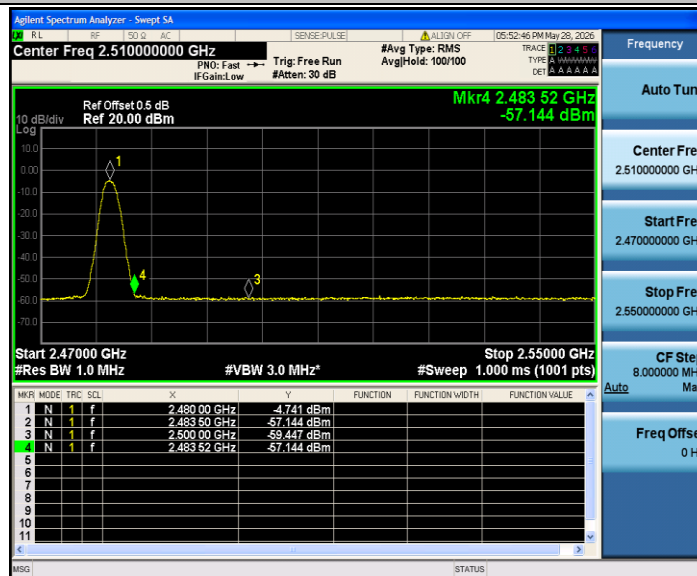
BLE_2M_Ant1_Low_2402_AV



BLE_2M_Ant1_Low_2402_Peak



BLE_2M_Ant1_High_2480_AV



BLE_2M_Ant1_High_2480_Peak

