

FCC Appendix RF Test Data for BLE

FCC ID : 2BFF7-ARK1800

Company : Shenzhen SYD Network Technology Co.,Ltd

EUT : Portable Power Station

Model Number : Elux1

Report No. : CTA26030901601

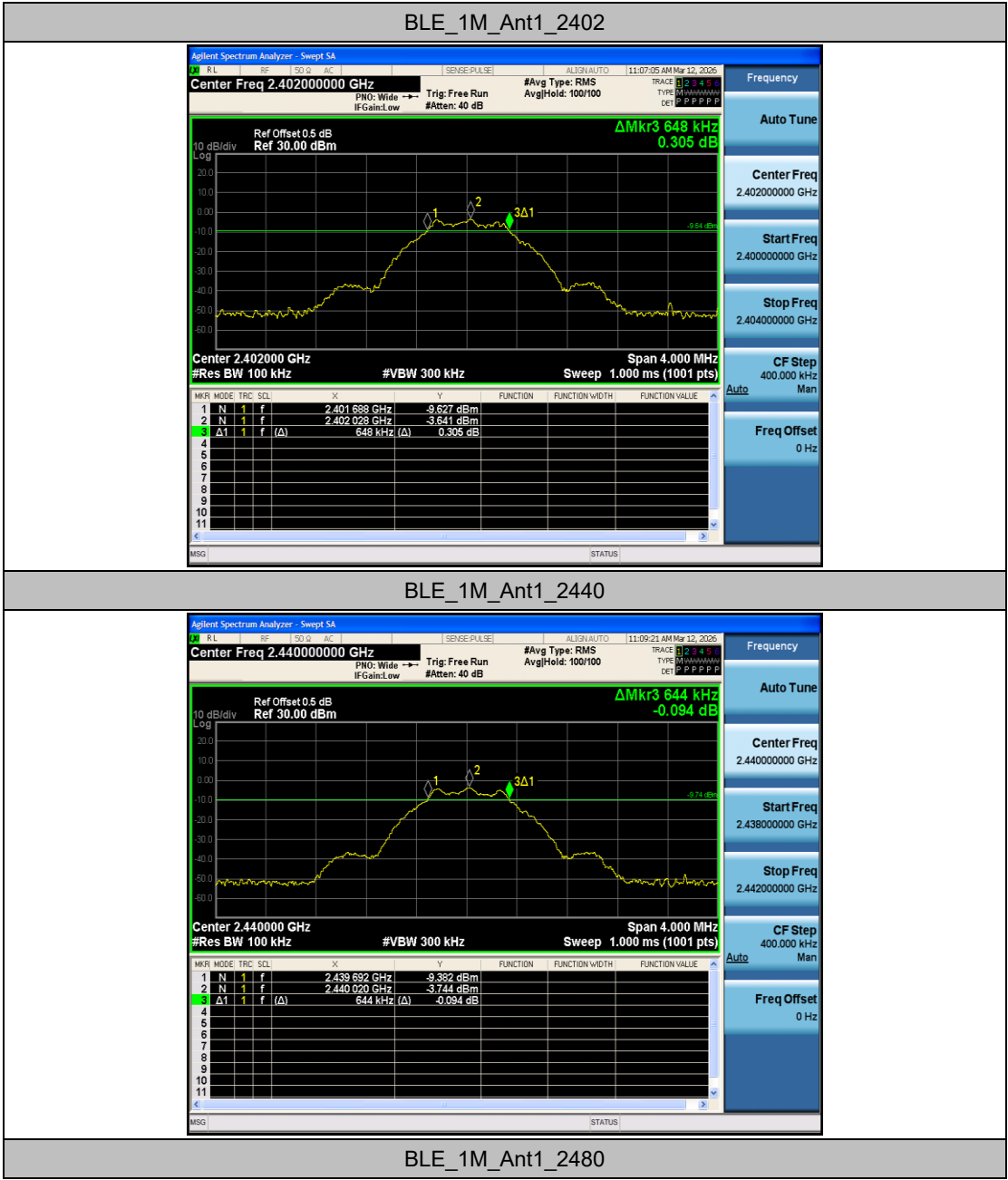
Reviewed By : Eric Wang

Appendix A: DTS Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.648	2401.688	2402.336	0.5	PASS
		2440	0.644	2439.692	2440.336	0.5	PASS
		2480	0.648	2479.688	2480.336	0.5	PASS
BLE_2M	Ant1	2402	1.100	2401.444	2402.544	0.5	PASS
		2440	1.128	2439.440	2440.568	0.5	PASS
		2480	1.052	2479.476	2480.528	0.5	PASS

Test Graphs





BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480

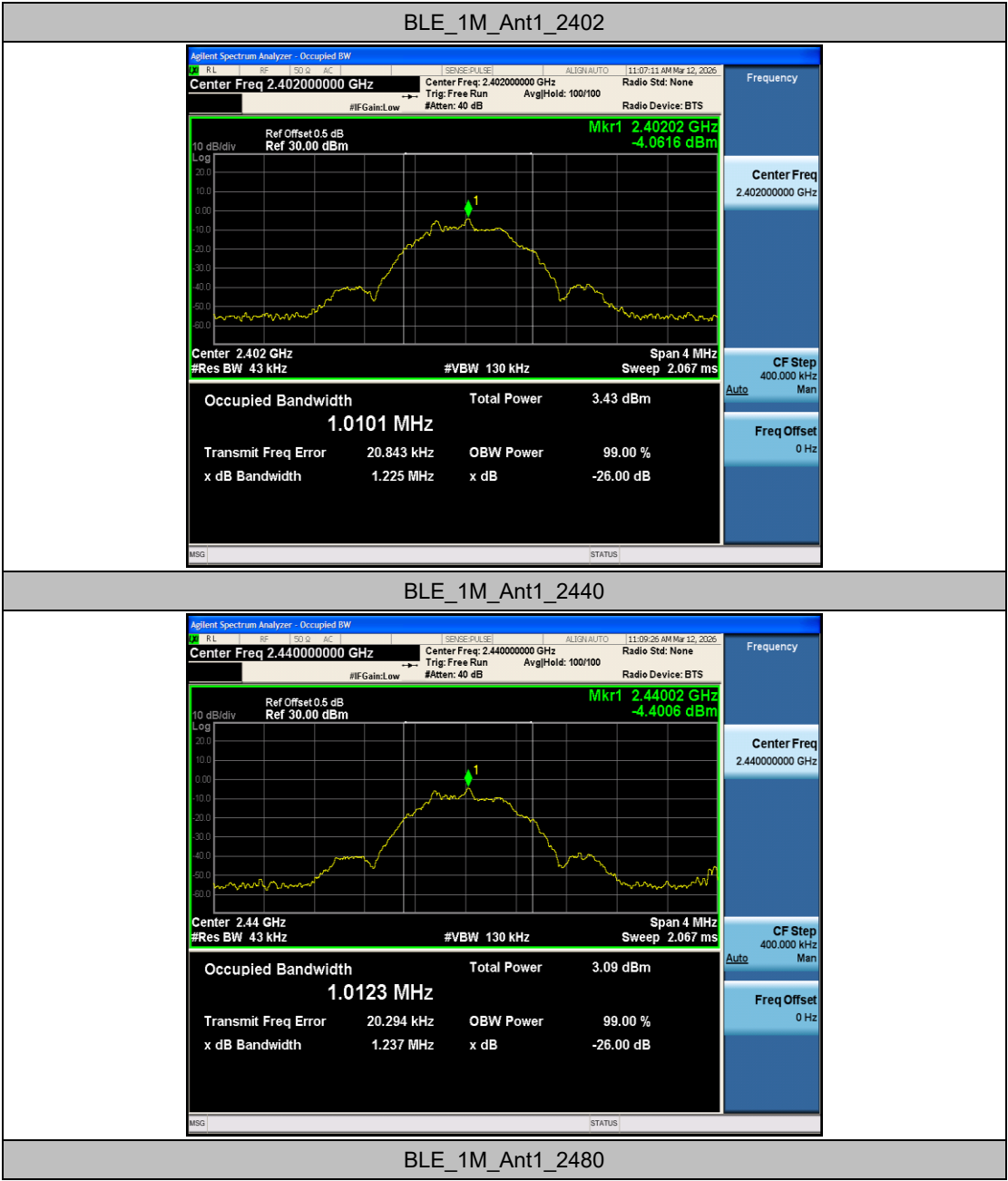


Appendix B: Occupied Channel Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0101	2401.5158	2402.5259	---	---
		2440	1.0123	2439.5141	2440.5264	---	---
		2480	1.0122	2479.5152	2480.5274	---	---
BLE_2M	Ant1	2402	2.0140	2401.0292	2403.0432	---	---
		2440	1.9986	2439.0307	2441.0293	---	---
		2480	2.0179	2479.0233	2481.0412	---	---

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	-3.21	≤30	PASS
		2440	-3.57	≤30	PASS
		2480	-3.69	≤30	PASS
BLE_2M	Ant1	2402	-3.30	≤30	PASS
		2440	-3.63	≤30	PASS
		2480	-3.69	≤30	PASS

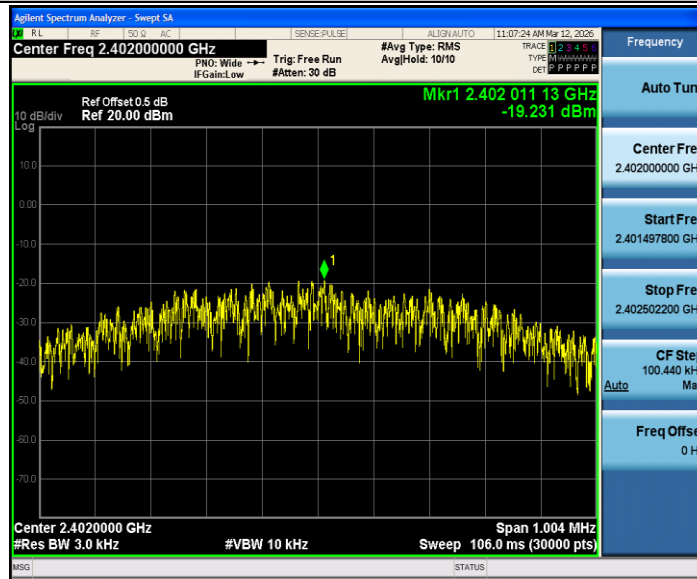
Appendix D: Maximum power spectral density

Test Result

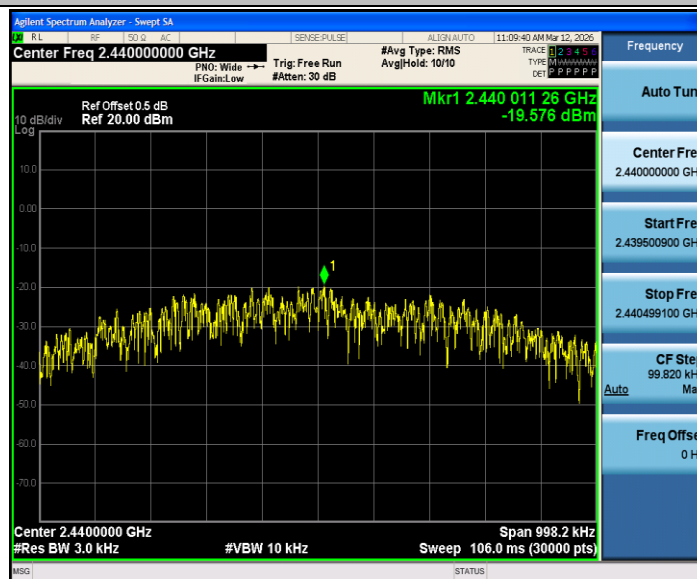
TestMode	Antenna	Freq(MHz)	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-19.23	≤8.00	PASS
		2440	-19.58	≤8.00	PASS
		2480	-19.73	≤8.00	PASS
BLE_2M	Ant1	2402	-20.08	≤8.00	PASS
		2440	-20.47	≤8.00	PASS
		2480	-20.82	≤8.00	PASS

Test Graphs

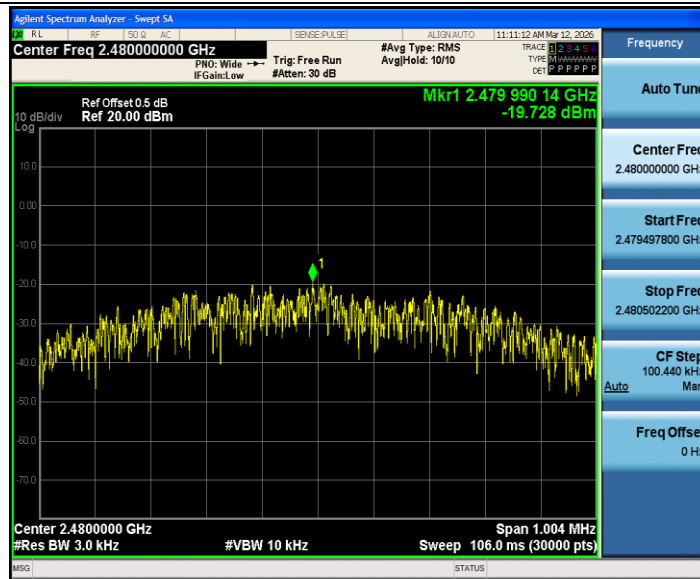
BLE_1M_Ant1_2402



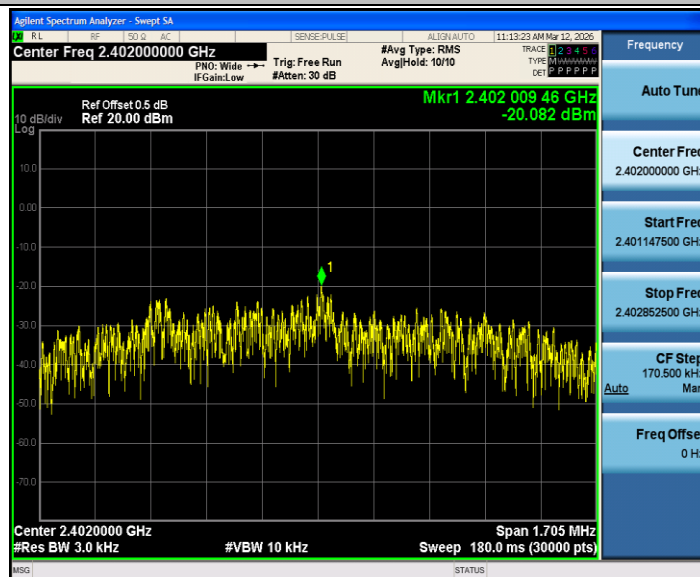
BLE_1M_Ant1_2440



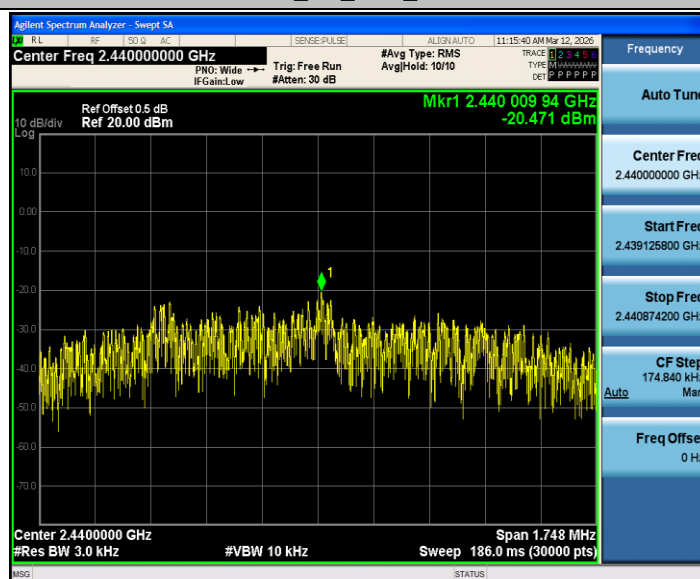
BLE_1M_Ant1_2480



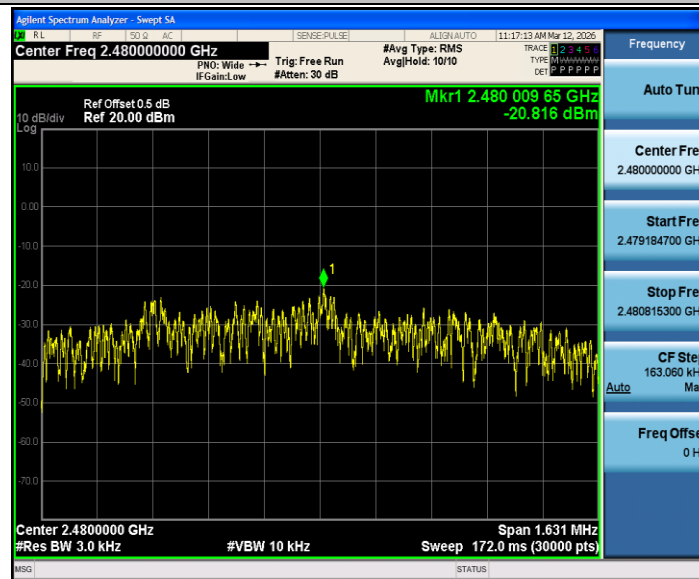
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480

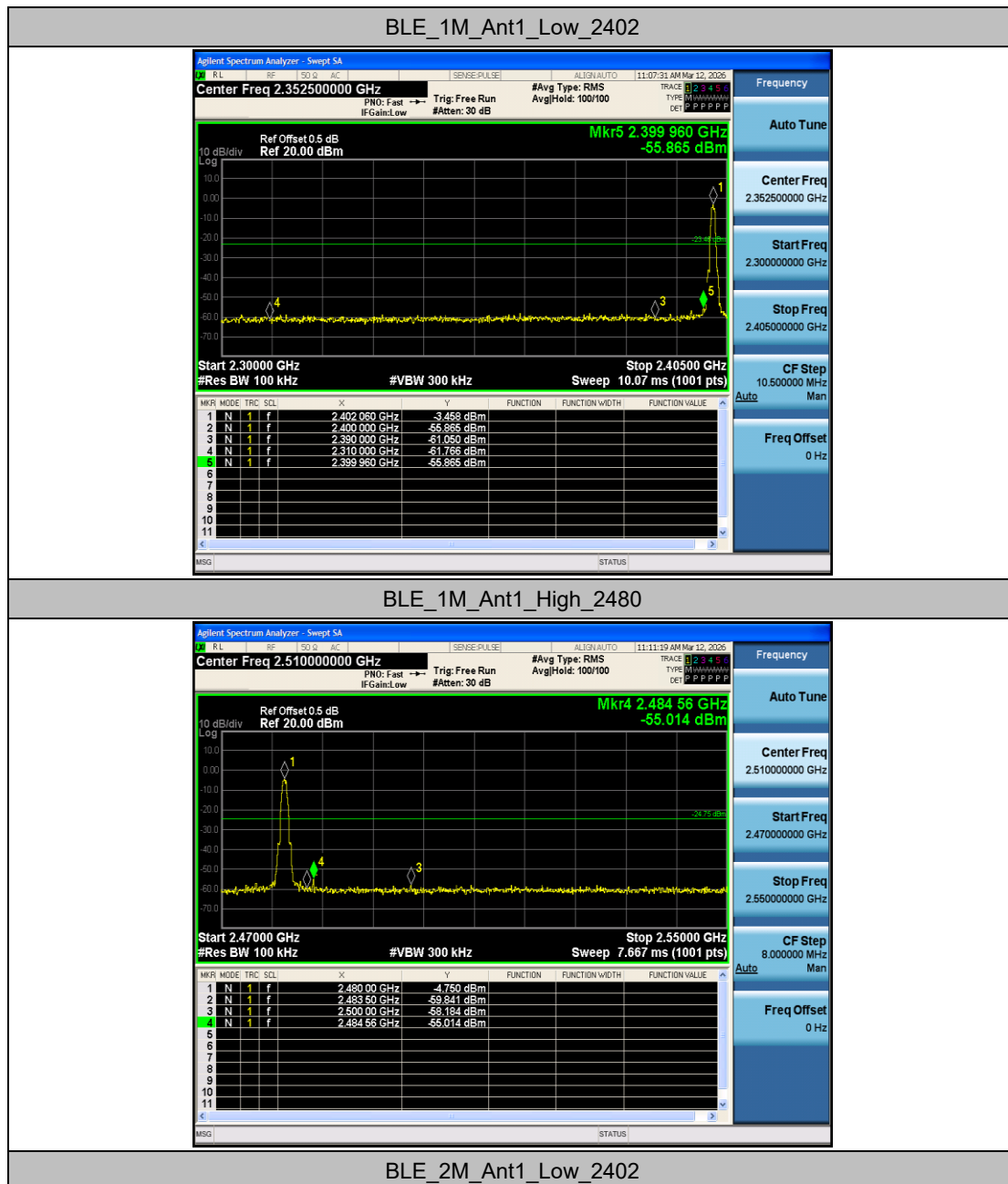


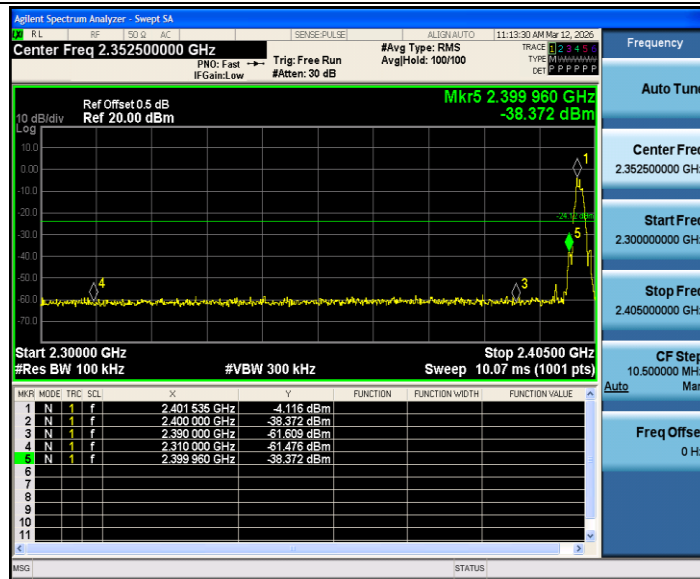
Appendix E: Band edge measurements

Test Result

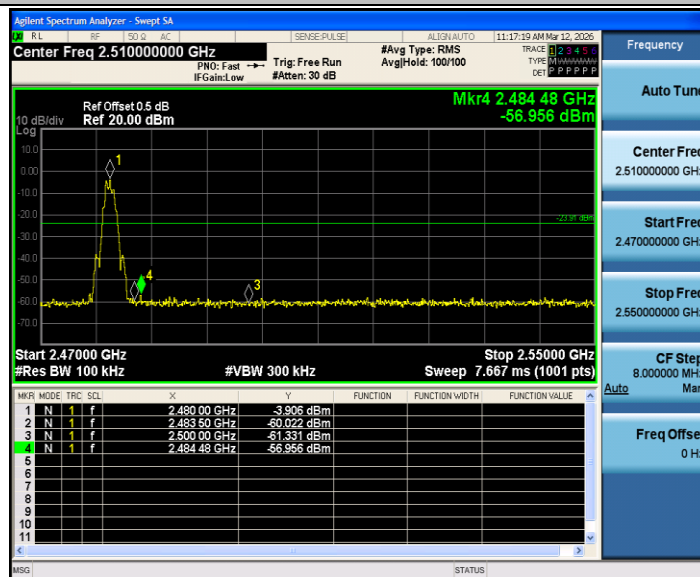
TestMod e	Antenn a	ChNam e	Freq(MHz)	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdic t
BLE_1M	Ant1	Low	2402	-3.46	-55.87	≤-23.46	PASS
		High	2480	-4.75	-55.01	≤-24.75	PASS
BLE_2M	Ant1	Low	2402	-4.12	-38.37	≤-24.12	PASS
		High	2480	-3.91	-56.96	≤-23.91	PASS

Test Graphs





BLE_2M_Ant1_High_2480

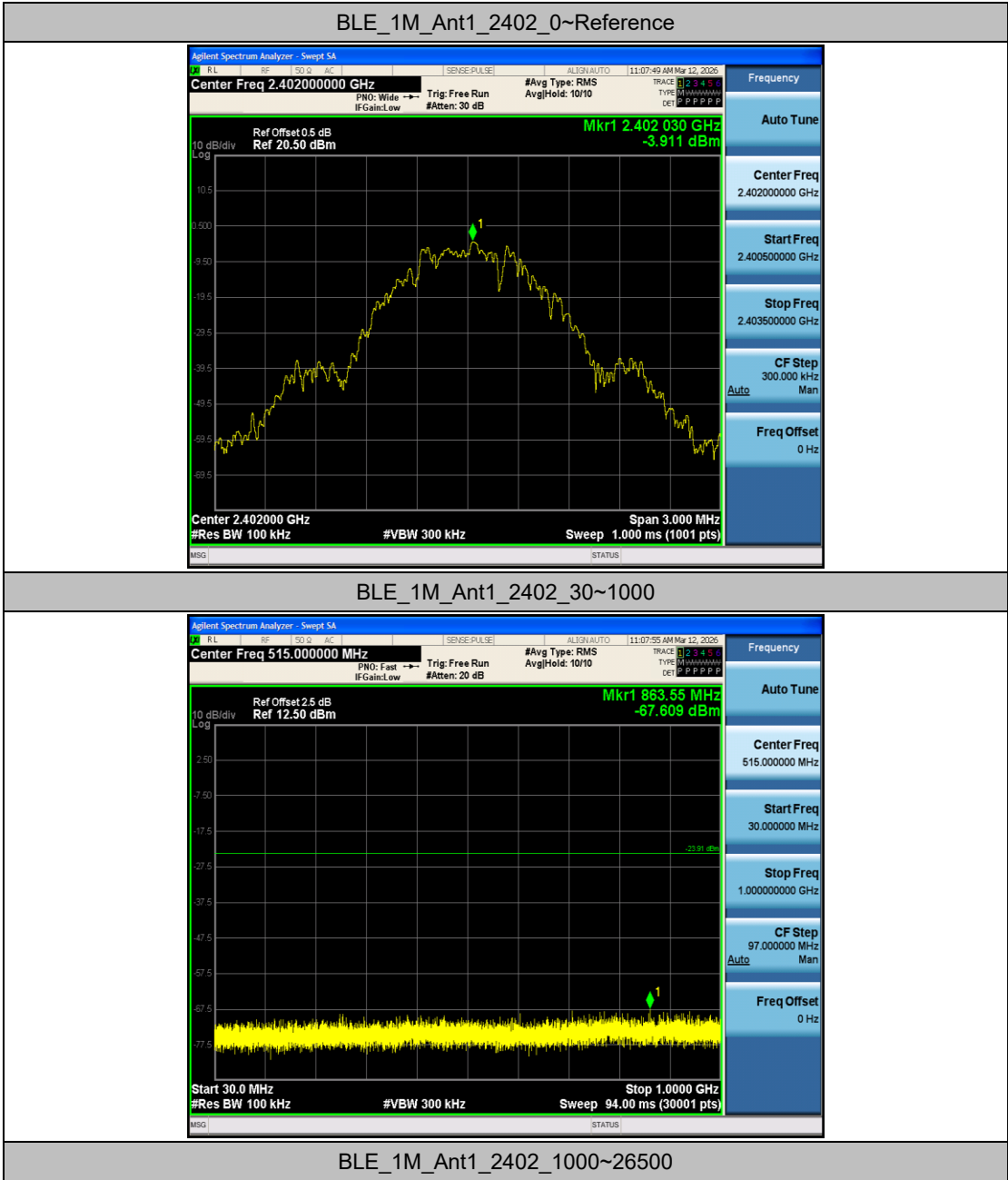


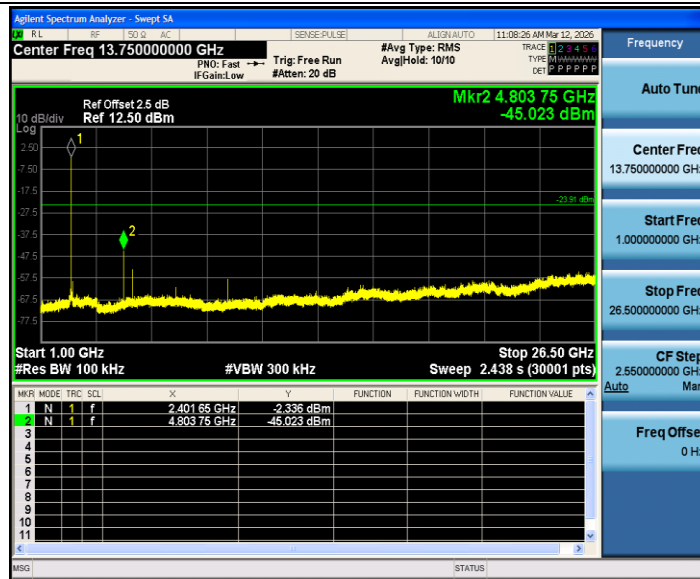
Appendix F: Conducted Spurious Emission

Test Result

TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	-3.91	-3.91	---	PASS
			30~1000	-3.91	-67.61	≤-23.91	PASS
			1000~26500	-3.91	-45.02	≤-23.91	PASS
		2440	Reference	-5.27	-5.27	---	PASS
			30~1000	-5.27	-63.14	≤-25.27	PASS
			1000~26500	-5.27	-46.42	≤-25.27	PASS
		2480	Reference	-5.24	-5.24	---	PASS
			30~1000	-5.24	-55.9	≤-25.24	PASS
			1000~26500	-5.24	-48.96	≤-25.24	PASS
BLE_2M	Ant1	2402	Reference	-4.19	-4.19	---	PASS
			30~1000	-4.19	-68.43	≤-24.19	PASS
			1000~26500	-4.19	-46.84	≤-24.19	PASS
		2440	Reference	-4.47	-4.47	---	PASS
			30~1000	-4.47	-59.44	≤-24.47	PASS
			1000~26500	-4.47	-49.81	≤-24.47	PASS
		2480	Reference	-4.34	-4.34	---	PASS
			30~1000	-4.34	-57.94	≤-24.34	PASS
			1000~26500	-4.34	-51.35	≤-24.34	PASS

Test Graphs

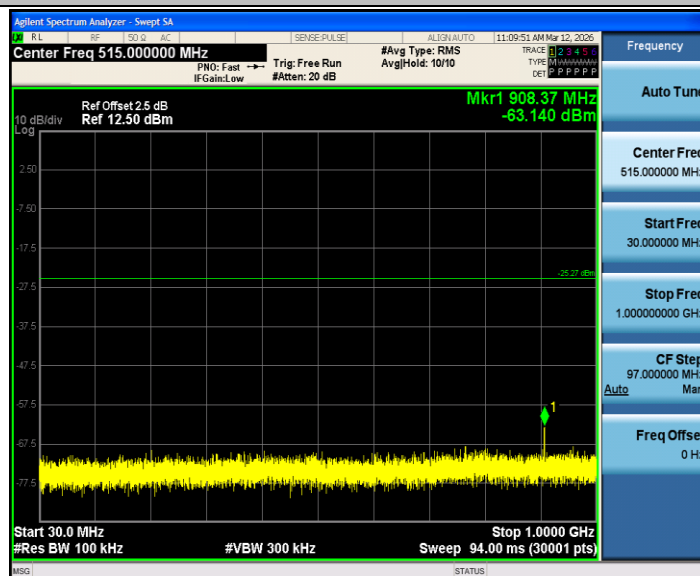




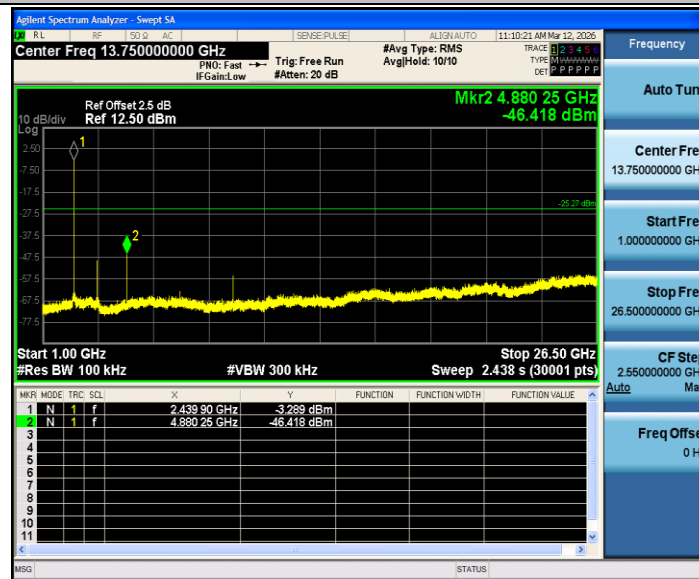
BLE_1M_Ant1_2440_0~Reference



BLE_1M_Ant1_2440_30~1000



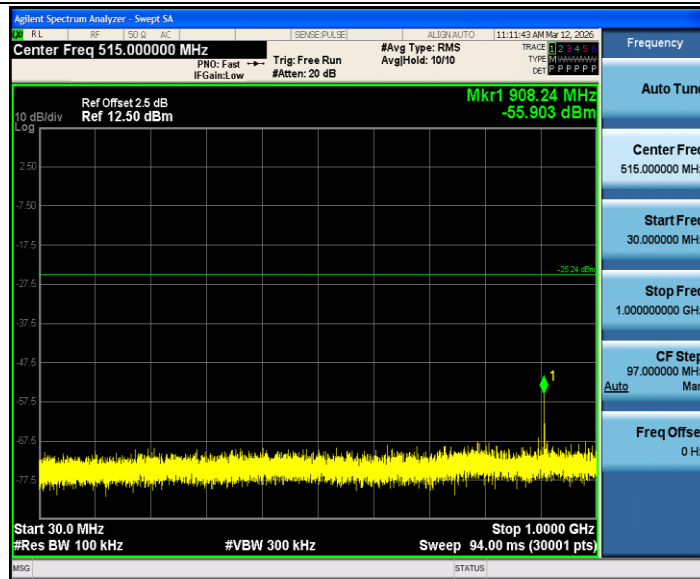
BLE_1M_Ant1_2440_1000~26500



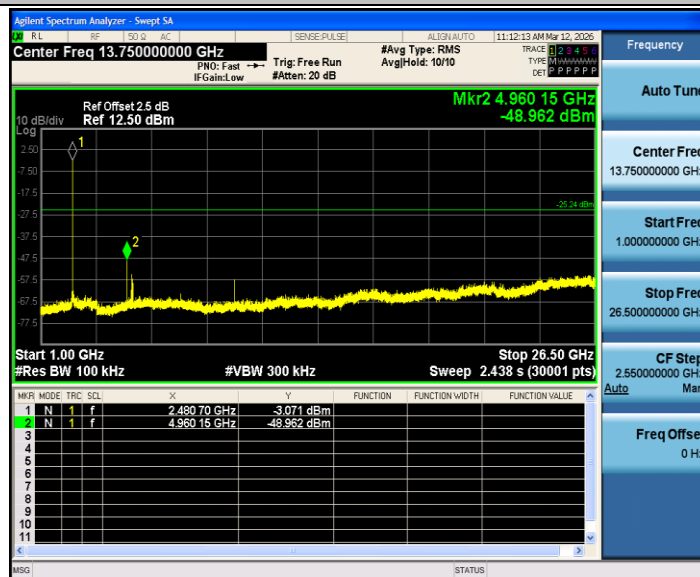
BLE_1M_Ant1_2480_0~Reference



BLE_1M_Ant1_2480_30~1000



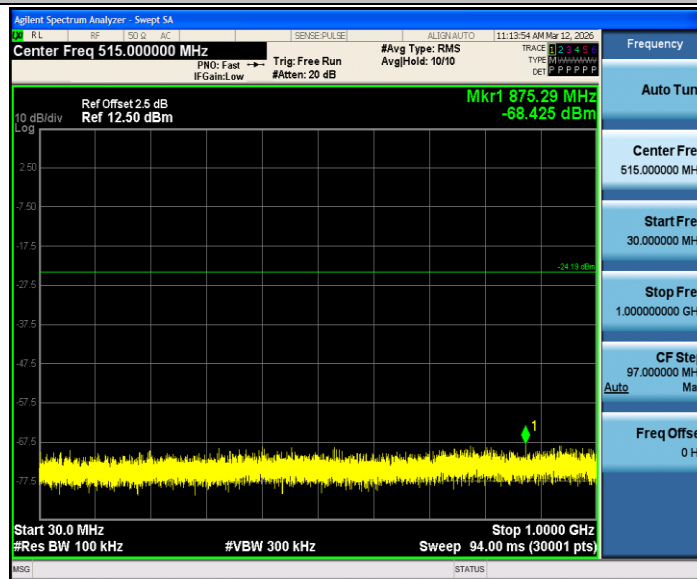
BLE_1M_Ant1_2480_1000~26500



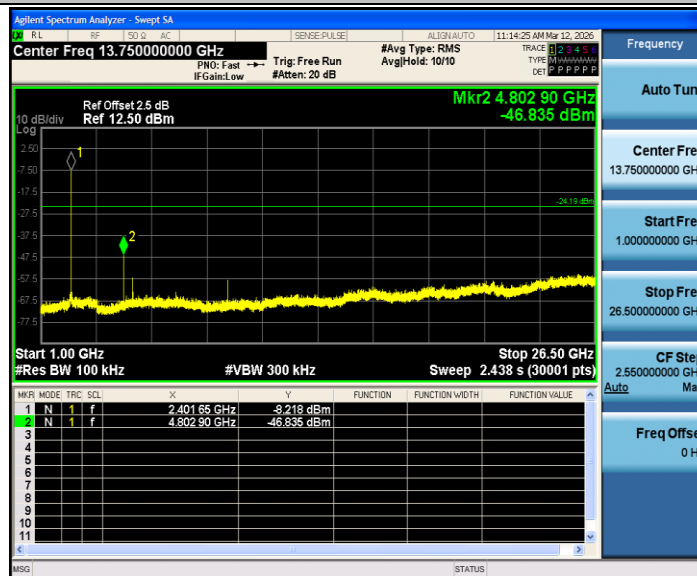
BLE_2M_Ant1_2402_0~Reference



BLE_2M_Ant1_2402_30~1000



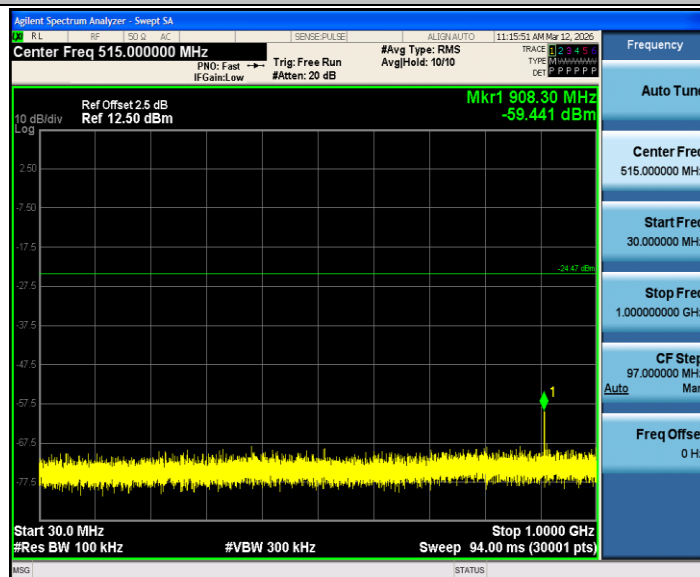
BLE_2M_Ant1_2402_1000~26500



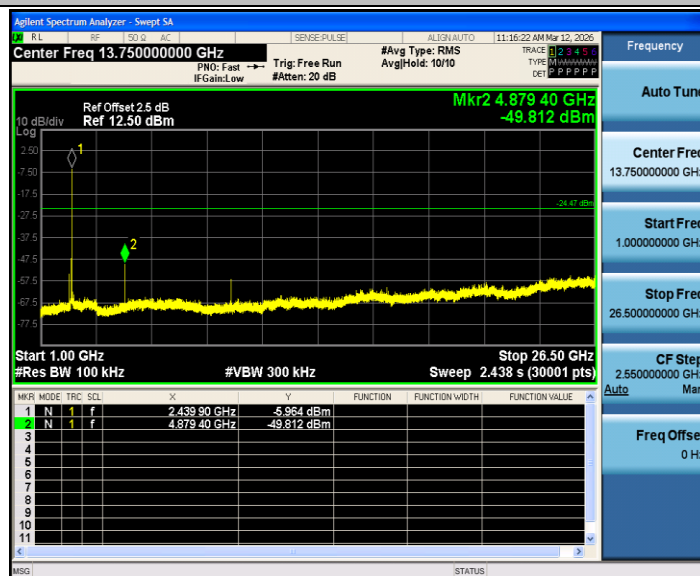
BLE_2M_Ant1_2440_0~Reference



BLE_2M_Ant1_2440_30~1000



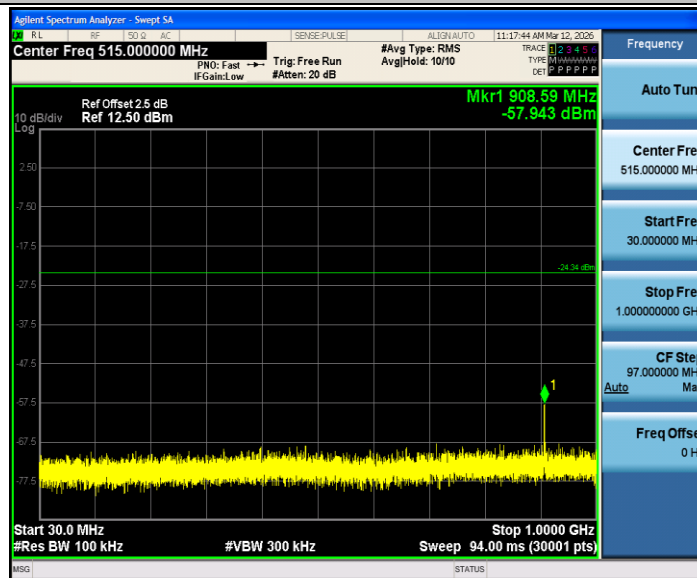
BLE_2M_Ant1_2440_1000~26500



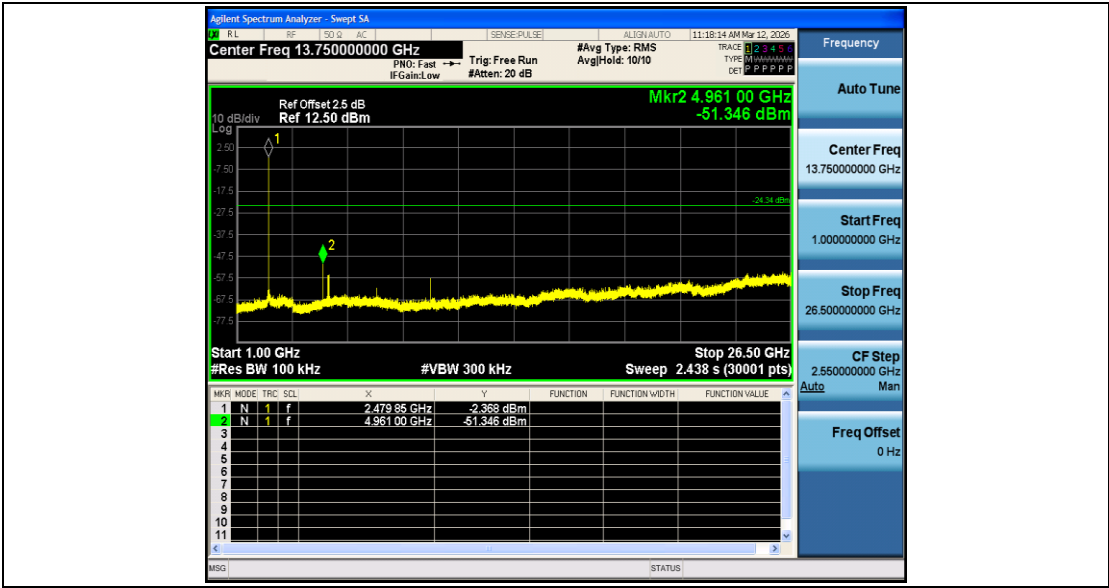
BLE_2M_Ant1_2480_0~Reference



BLE_2M_Ant1_2480_30~1000



BLE_2M_Ant1_2480_1000~26500



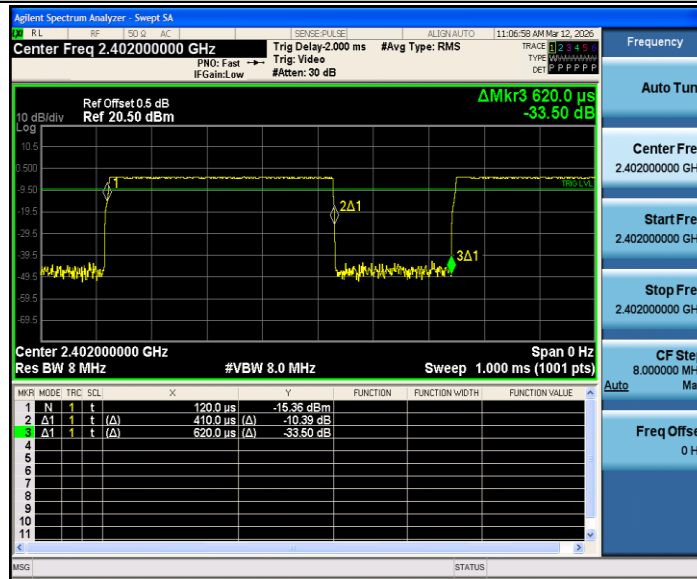
Appendix G: Duty Cycle

Test Result

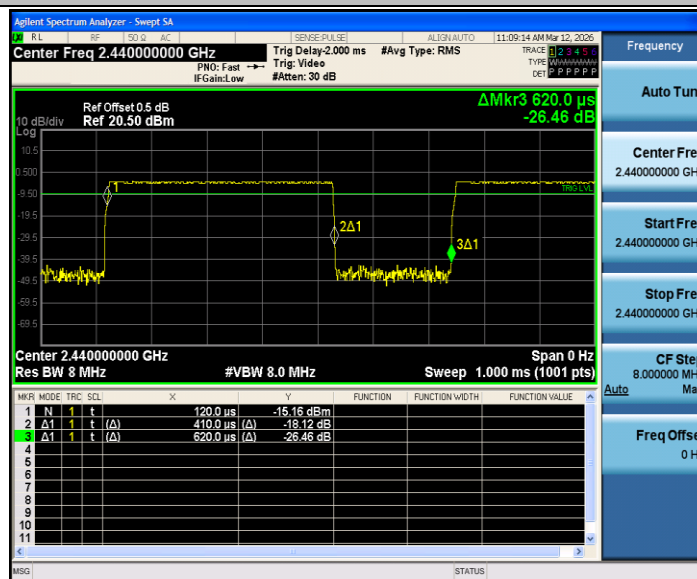
TestMode	Antenna	Freq(MHz)	ON Time [ms]	Period [ms]	X	DC [%]	xFactor	Limit	Verdict
BLE_1M	Ant1	2402	0.41	0.62	0.6613	66.13	1.80	---	---
		2440	0.41	0.62	0.6613	66.13	1.80	---	---
		2480	0.41	0.62	0.6613	66.13	1.80	---	---
BLE_2M	Ant1	2402	0.23	0.62	0.3710	37.10	4.31	---	---
		2440	0.23	0.62	0.3710	37.10	4.31	---	---
		2480	0.23	0.62	0.3710	37.10	4.31	---	---

Test Graphs

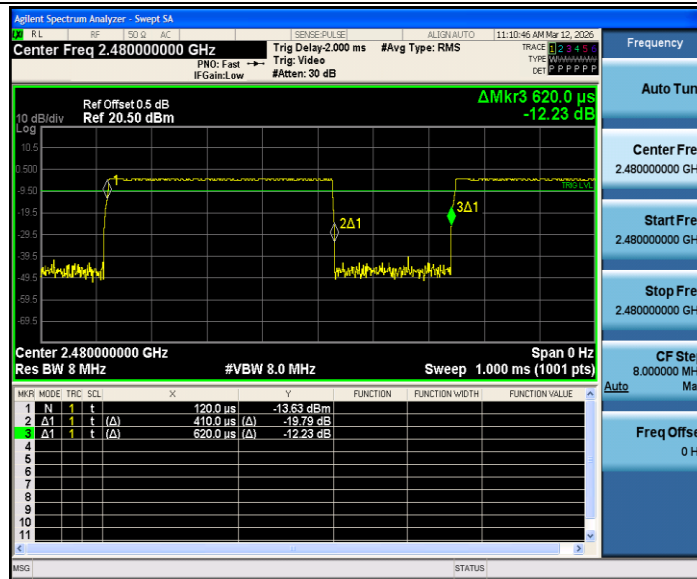
BLE_1M_Ant1_2402



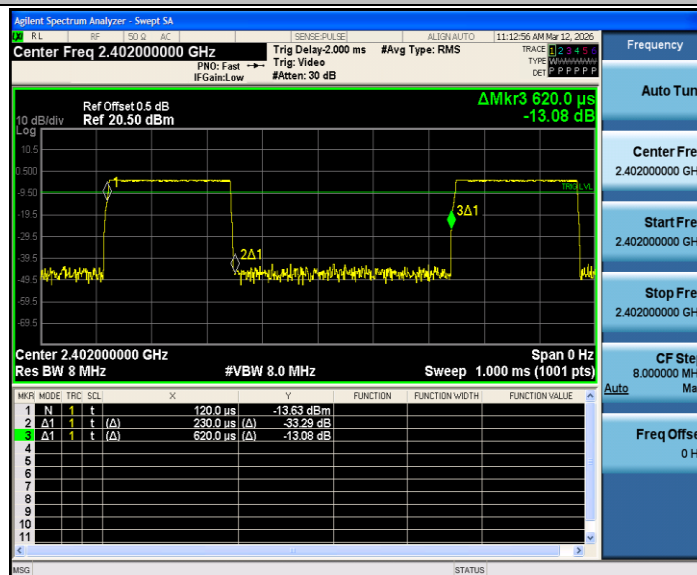
BLE_1M_Ant1_2440



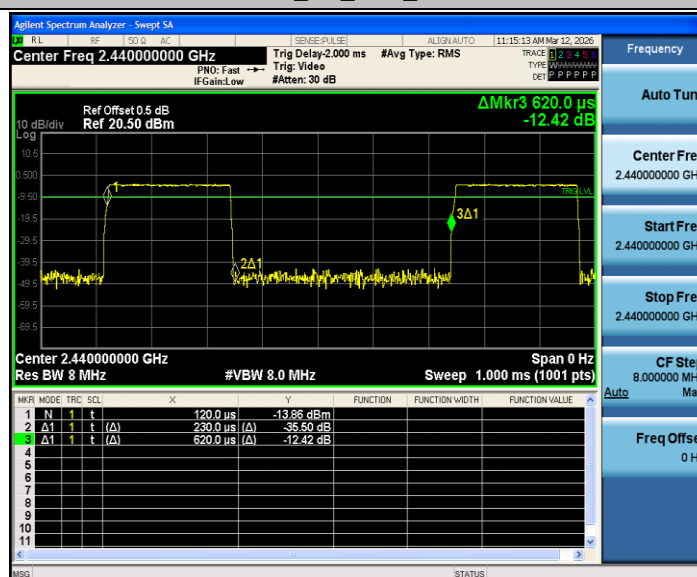
BLE_1M_Ant1_2480



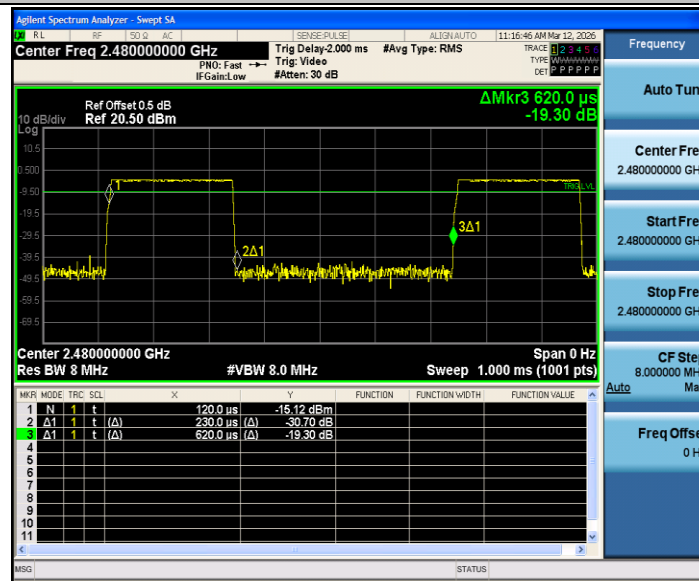
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480



Appendix H: Emissions in Restricted Bands

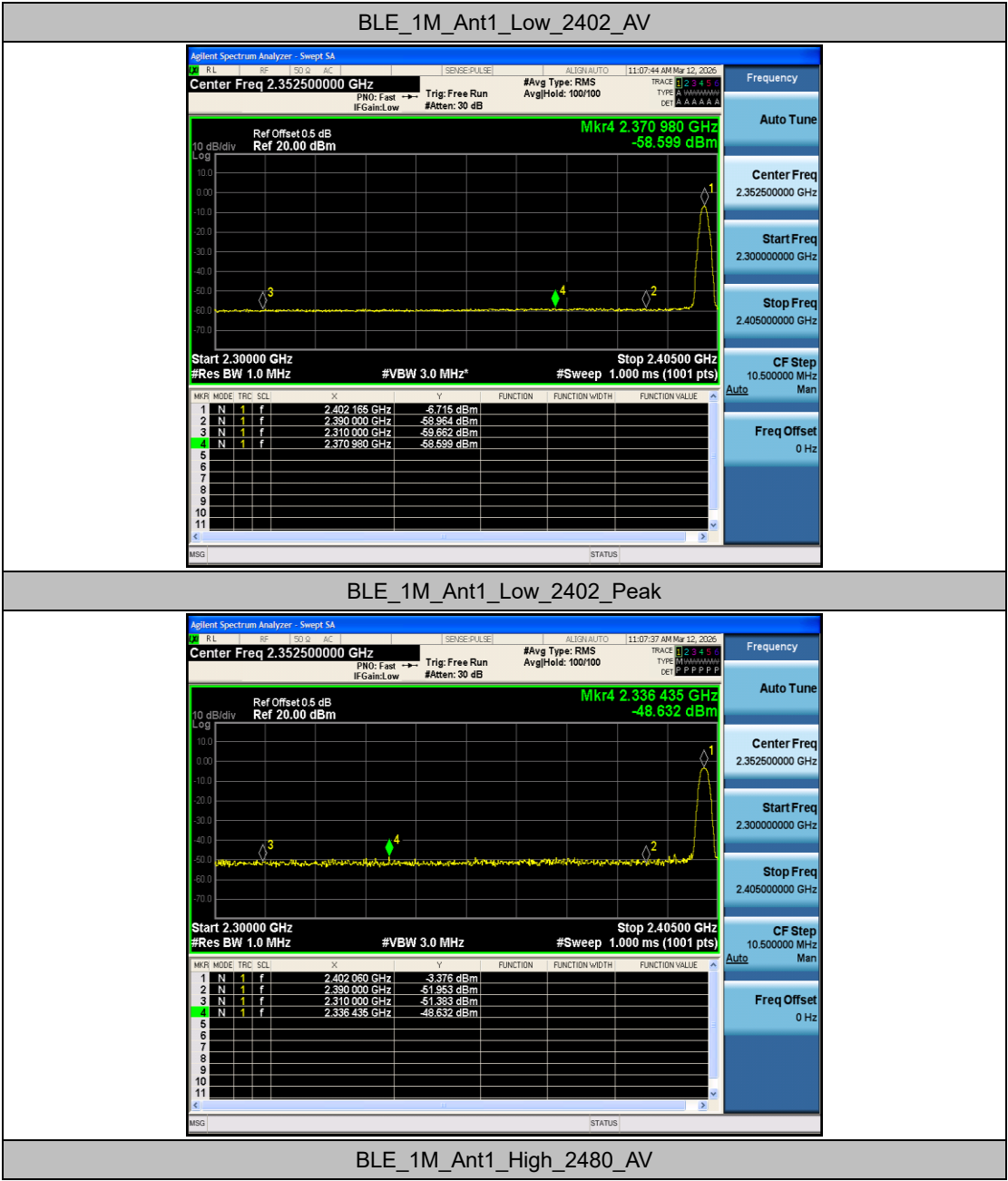
Test Result

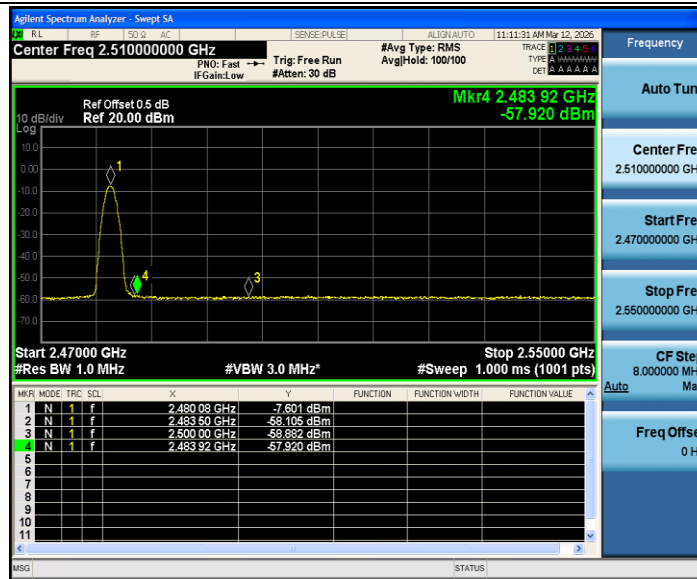
TestMode	Antenna	ChName	Freq(MHz)	Detector	Freq [MHz]	Result [dBm]	Gain [dB]	DC Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
BLE_1M	Ant1	Low	2402	AV	2310.000	-59.66	4.16	1.80	41.5	≤54	PASS
				AV	2370.980	-58.6	4.16	1.80	42.56	≤54	PASS
				AV	2390.000	-58.96	4.16	1.80	42.2	≤54	PASS
				Peak	2310.000	-51.38	4.16	0.00	47.98	≤74	PASS
				Peak	2336.435	-48.63	4.16	0.00	50.73	≤74	PASS
				Peak	2390.000	-51.95	4.16	0.00	47.41	≤74	PASS
		High	2480	AV	2483.500	-58.11	4.16	1.80	43.05	≤54	PASS
				AV	2483.920	-57.92	4.16	1.80	43.24	≤54	PASS
				AV	2500.000	-58.88	4.16	1.80	42.28	≤54	PASS
				Peak	2483.500	-49.35	4.16	0.00	50.01	≤74	PASS
				Peak	2484.240	-45.06	4.16	0.00	54.3	≤74	PASS
				Peak	2500.000	-50.25	4.16	0.00	49.11	≤74	PASS
BLE_2M	Ant1	Low	2402	AV	2310.000	-60.37	4.16	4.31	43.3	≤54	PASS
				AV	2383.790	-58.86	4.16	4.31	44.81	≤54	PASS
				AV	2390.000	-59.76	4.16	4.31	43.91	≤54	PASS
				Peak	2310.000	-51.73	4.16	0.00	47.63	≤74	PASS
				Peak	2379.380	-48.88	4.16	0.00	50.48	≤74	PASS
				Peak	2390.000	-51.9	4.16	0.00	47.46	≤74	PASS
		High	2480	AV	2483.500	-58.15	4.16	4.31	45.52	≤54	PASS
				AV	2484.800	-57.91	4.16	4.31	45.76	≤54	PASS
				AV	2500.000	-58.85	4.16	4.31	44.82	≤54	PASS
				Peak	2483.500	-49.25	4.16	0.00	50.11	≤74	PASS
				Peak	2484.960	-47.43	4.16	0.00	51.93	≤74	PASS
				Peak	2500.000	-51.16	4.16	0.00	48.2	≤74	PASS

Note:

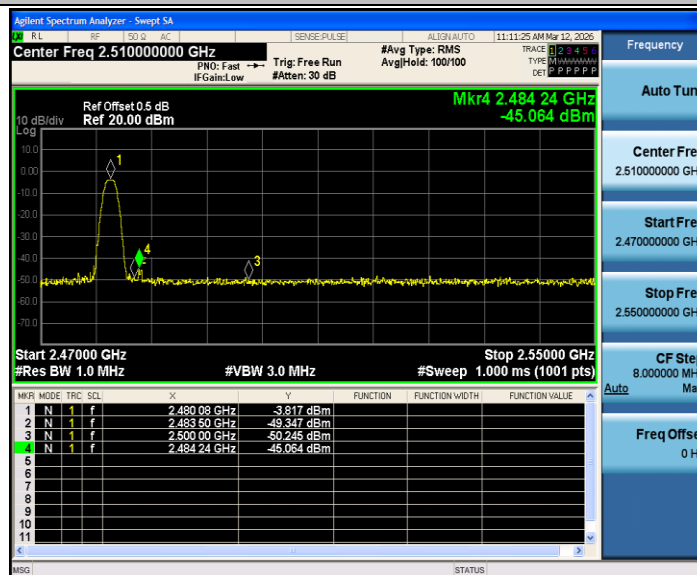
1. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

Test Graphs

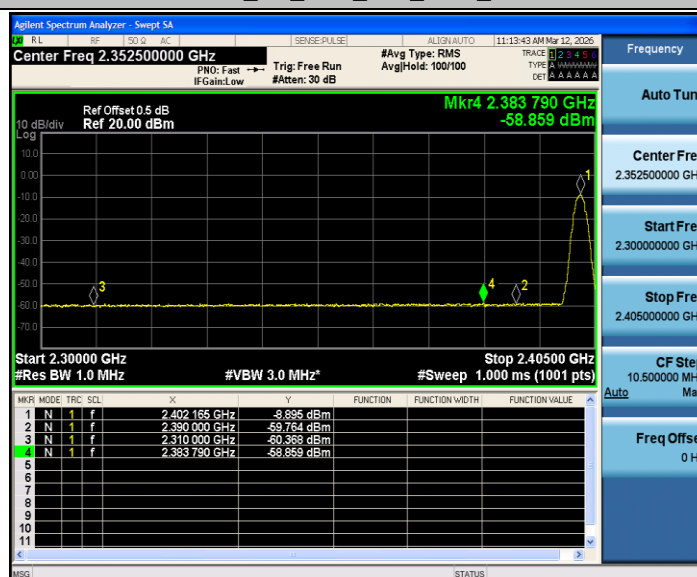




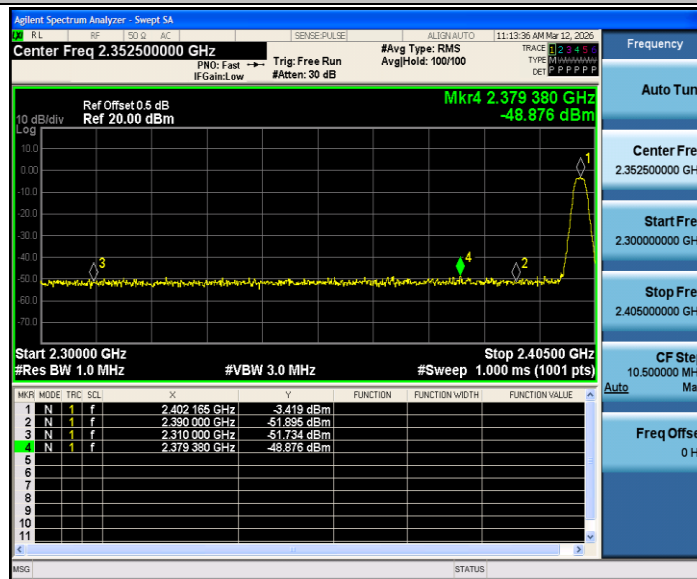
BLE_1M_Ant1_High_2480_Peak



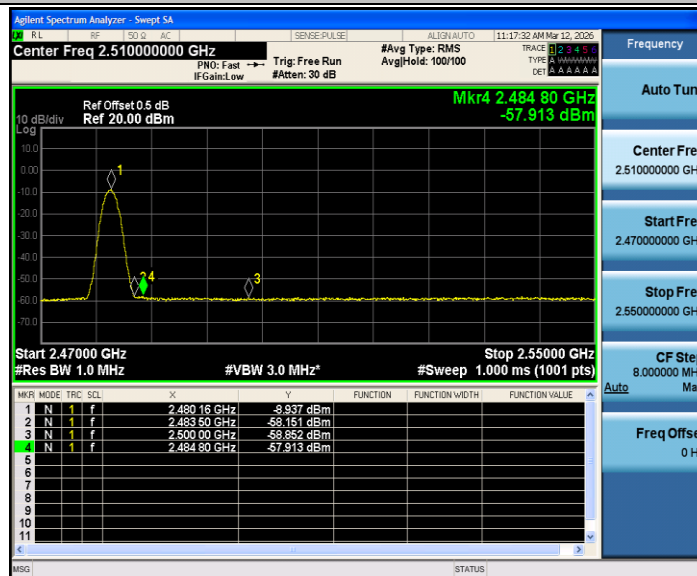
BLE_2M_Ant1_Low_2402_AV



BLE_2M_Ant1_Low_2402_Peak



BLE_2M_Ant1_High_2480_AV



BLE_2M_Ant1_High_2480_Peak

