

FCC Appendix RF Test Data for BLE

FCC ID : 2BVT2-PCCS12

Company : NINGBO ZS ACOUSTIC CO.,LTD

EUT : 12-inch Column Speaker

Model Number : PCCS12

Report No. : CTA26040700902

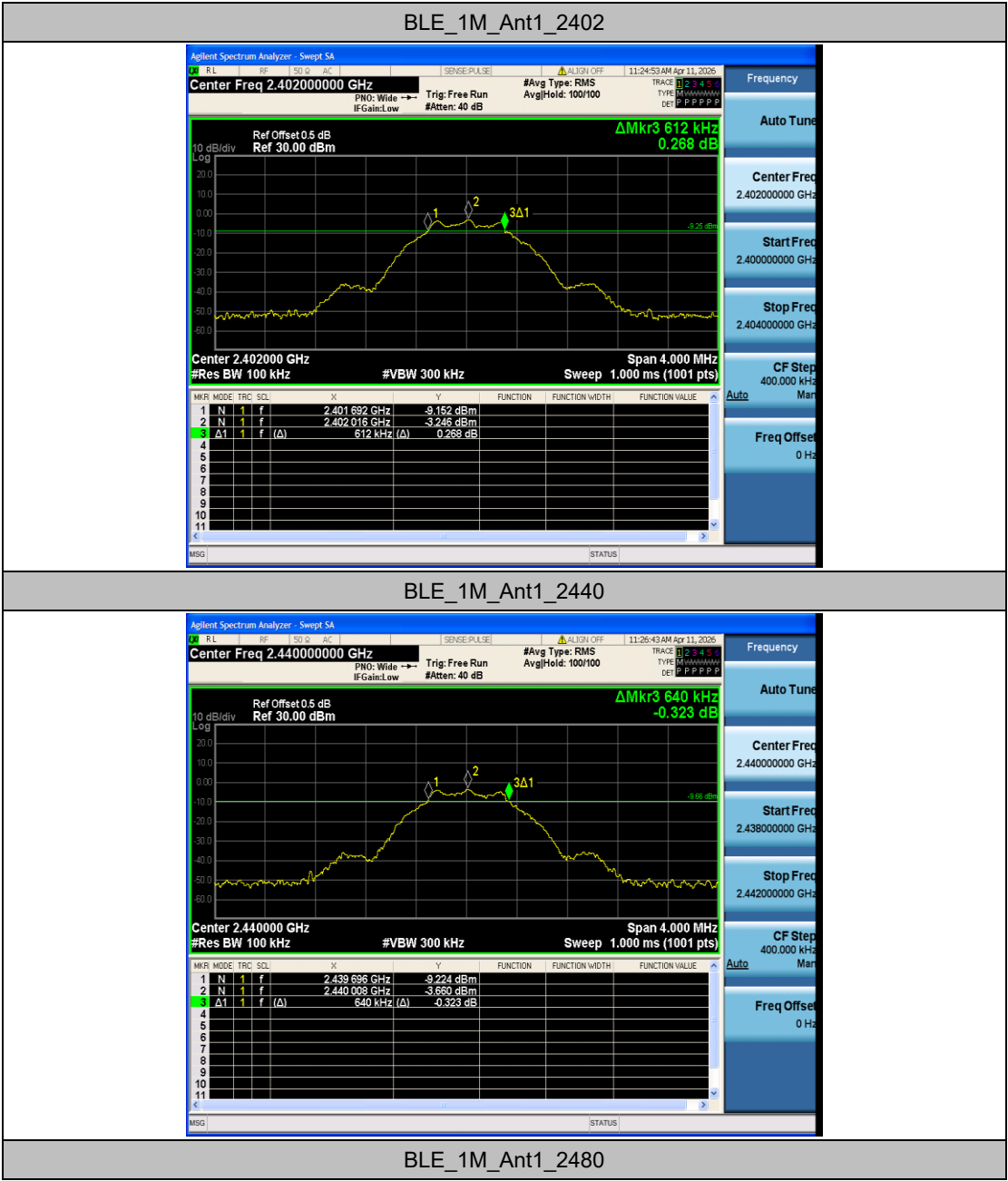
Reviewed By : Eric Wang

Appendix A: DTS Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.612	2401.692	2402.304	0.5	PASS
		2440	0.640	2439.696	2440.336	0.5	PASS
		2480	0.660	2479.684	2480.344	0.5	PASS
BLE_2M	Ant1	2402	1.136	2401.444	2402.580	0.5	PASS
		2440	1.096	2439.448	2440.544	0.5	PASS
		2480	1.080	2479.452	2480.532	0.5	PASS

Test Graphs





BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480

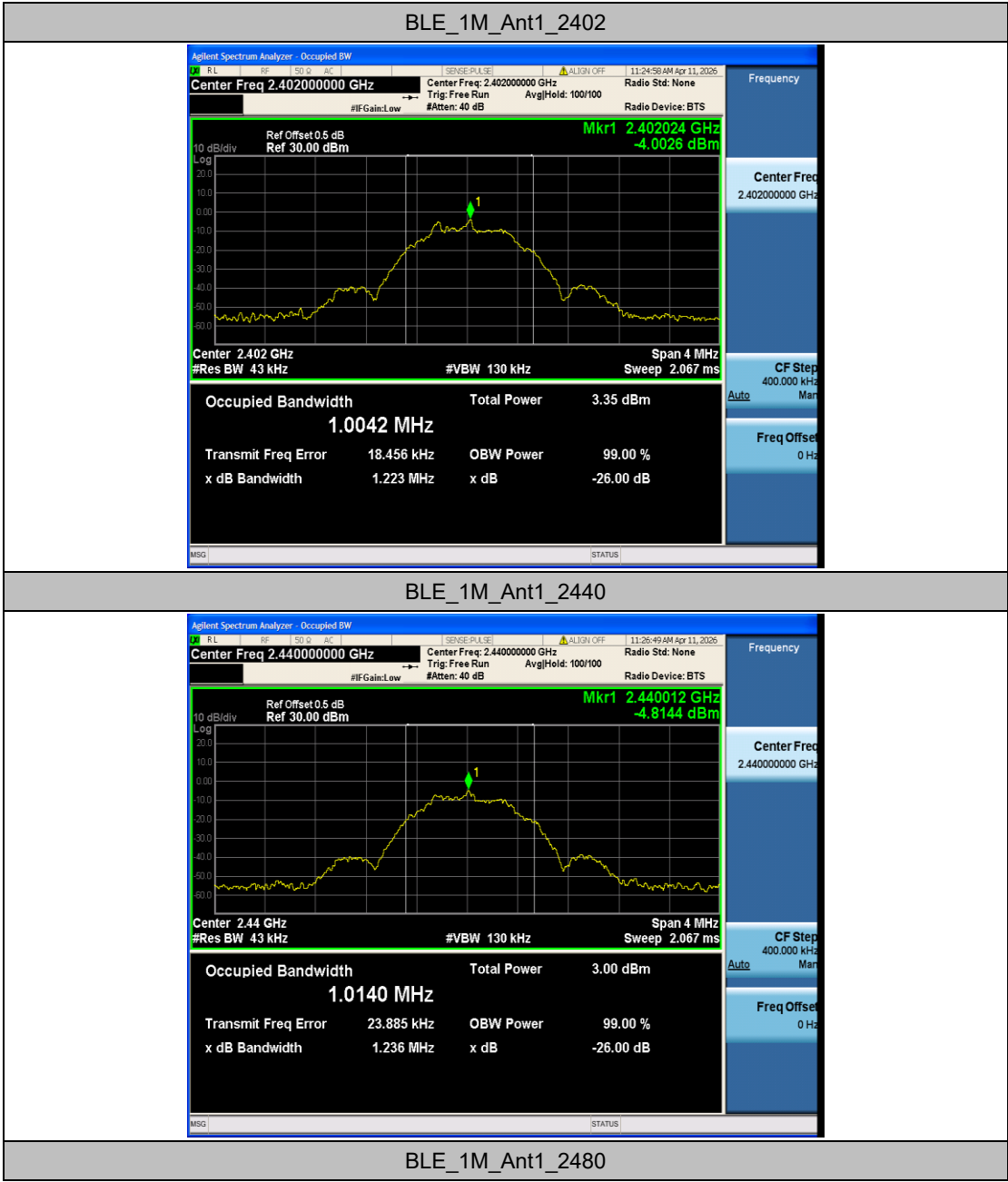


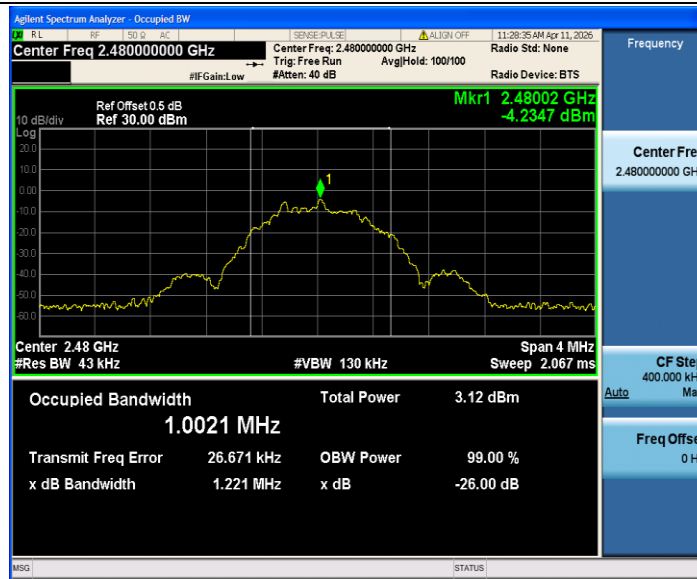
Appendix B: Occupied Channel Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0042	2401.5164	2402.5206	---	---
		2440	1.0140	2439.5169	2440.5309	---	---
		2480	1.0021	2479.5256	2480.5277	---	---
BLE_2M	Ant1	2402	2.0135	2401.0271	2403.0406	---	---
		2440	1.9939	2439.0295	2441.0234	---	---
		2480	2.0102	2479.0318	2481.0420	---	---

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	-3.16	≤30	PASS
		2440	-3.41	≤30	PASS
		2480	-3.47	≤30	PASS
BLE_2M	Ant1	2402	-6.37	≤30	PASS
		2440	-6.57	≤30	PASS
		2480	-6.74	≤30	PASS

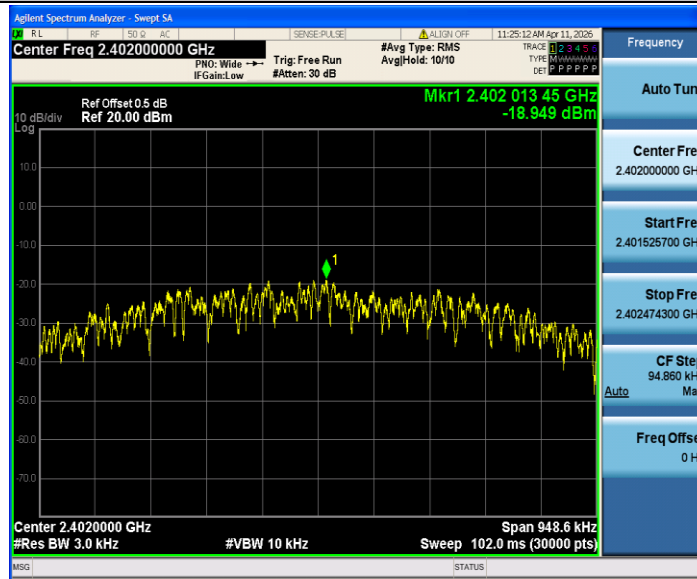
Appendix D: Maximum power spectral density

Test Result

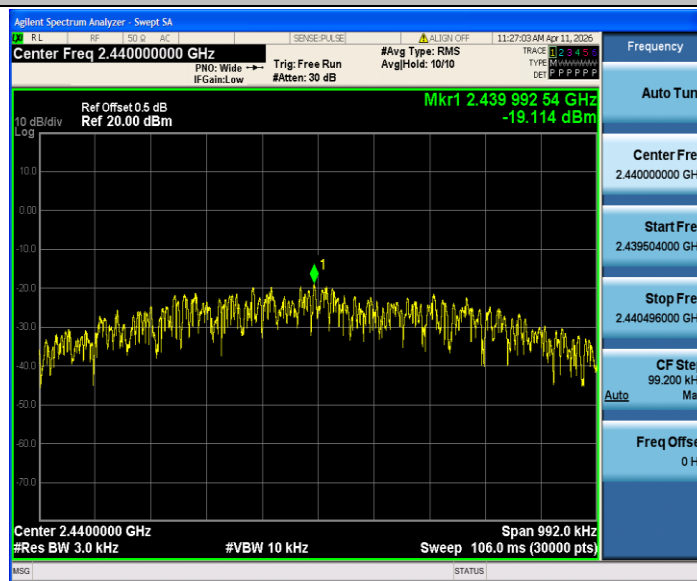
TestMode	Antenna	Freq(MHz)	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-18.95	≤8.00	PASS
		2440	-19.11	≤8.00	PASS
		2480	-19.14	≤8.00	PASS
BLE_2M	Ant1	2402	-22.63	≤8.00	PASS
		2440	-23.93	≤8.00	PASS
		2480	-22.96	≤8.00	PASS

Test Graphs

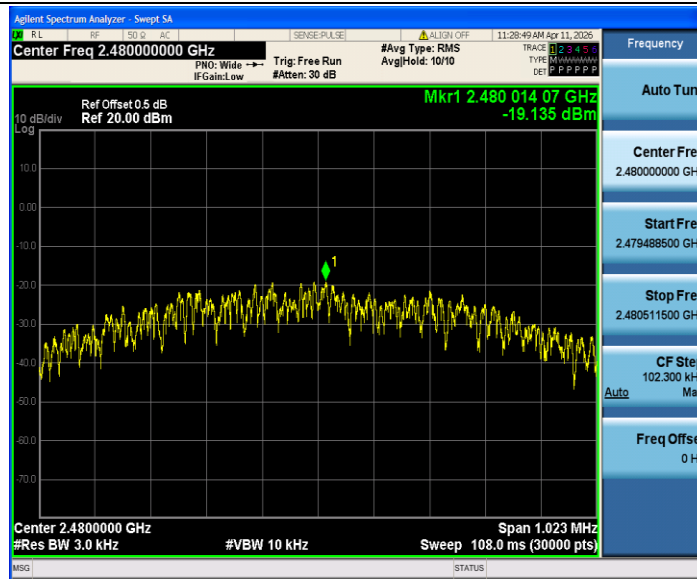
BLE_1M_Ant1_2402



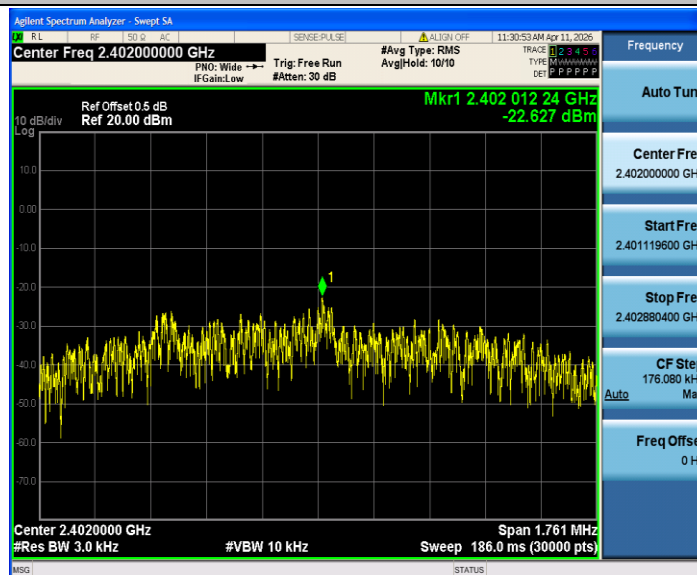
BLE_1M_Ant1_2440



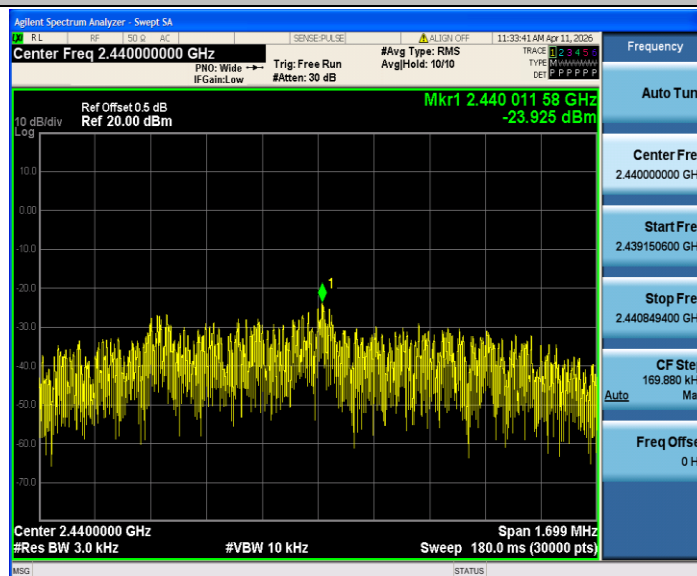
BLE_1M_Ant1_2480



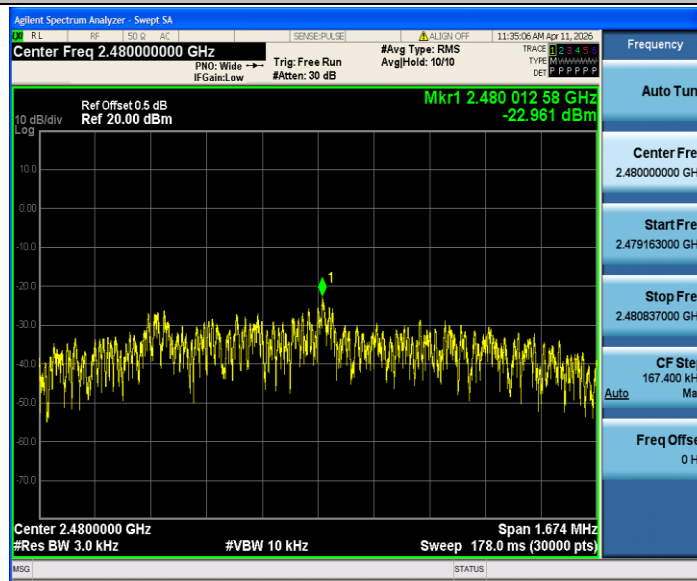
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480

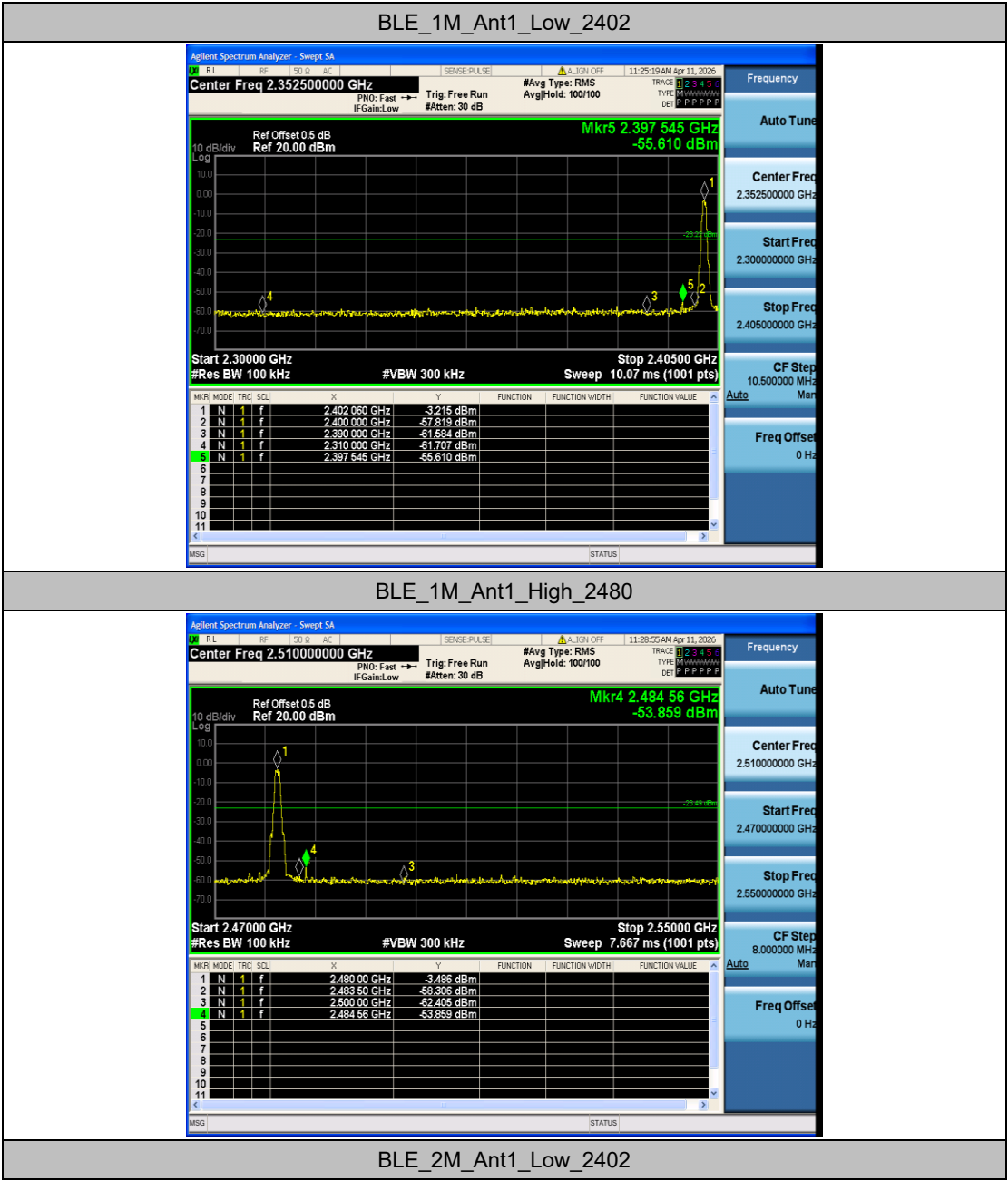


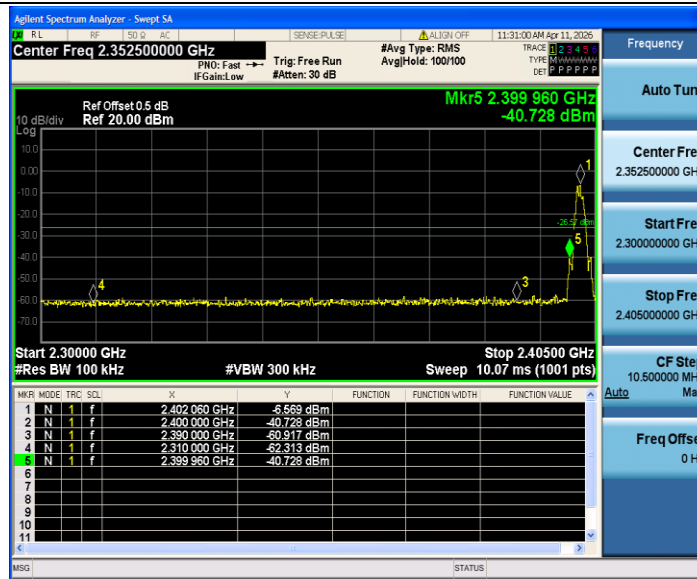
Appendix E: Band edge measurements

Test Result

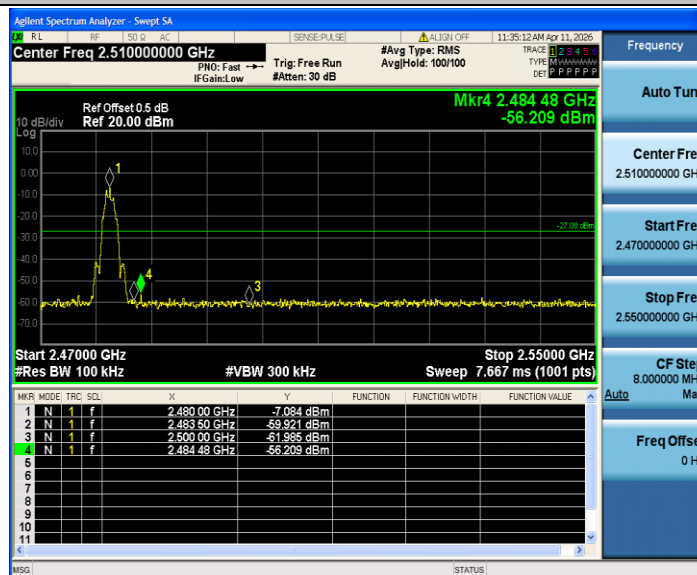
TestMode	Antenna	Channel	Freq(MHz)	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	-3.22	-55.61	≤-23.22	PASS
		High	2480	-3.49	-53.86	≤-23.49	PASS
BLE_2M	Ant1	Low	2402	-6.57	-40.73	≤-26.57	PASS
		High	2480	-7.08	-56.21	≤-27.08	PASS

Test Graphs





BLE_2M_Ant1_High_2480



Appendix F: Conducted Spurious Emission

Test Result

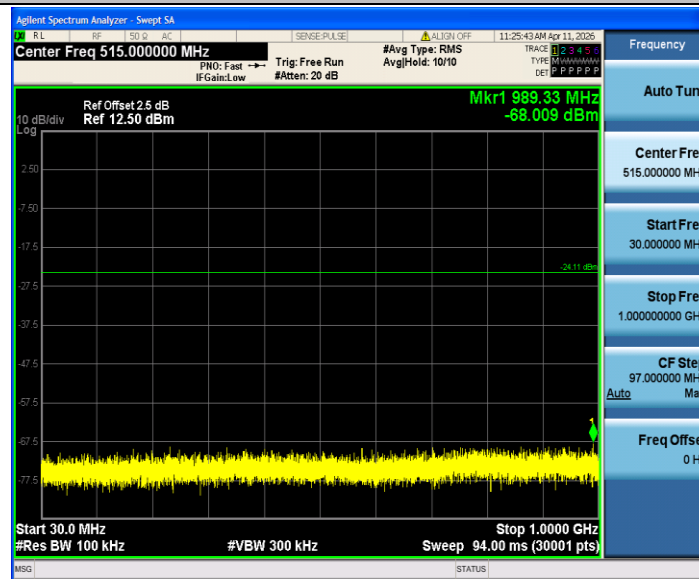
TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	-4.11	-4.11	---	PASS
			30~1000	-4.11	-68.01	≤-24.11	PASS
			1000~26500	-4.11	-47.85	≤-24.11	PASS
		2440	Reference	-4.26	-4.26	---	PASS
			30~1000	-4.26	-67.48	≤-24.26	PASS
			1000~26500	-4.26	-45.92	≤-24.26	PASS
		2480	Reference	-4.34	-4.34	---	PASS
			30~1000	-4.34	-67.92	≤-24.34	PASS
			1000~26500	-4.34	-47.34	≤-24.34	PASS
BLE_2M	Ant1	2402	Reference	-6.70	-6.70	---	PASS
			30~1000	-6.70	-67.76	≤-26.7	PASS
			1000~26500	-6.70	-55.04	≤-26.7	PASS
		2440	Reference	-7.98	-7.98	---	PASS
			30~1000	-7.98	-68.54	≤-27.98	PASS
			1000~26500	-7.98	-55.65	≤-27.98	PASS
		2480	Reference	-9.23	-9.23	---	PASS
			30~1000	-9.23	-67.67	≤-29.23	PASS
			1000~26500	-9.23	-51.51	≤-29.23	PASS

Test Graphs

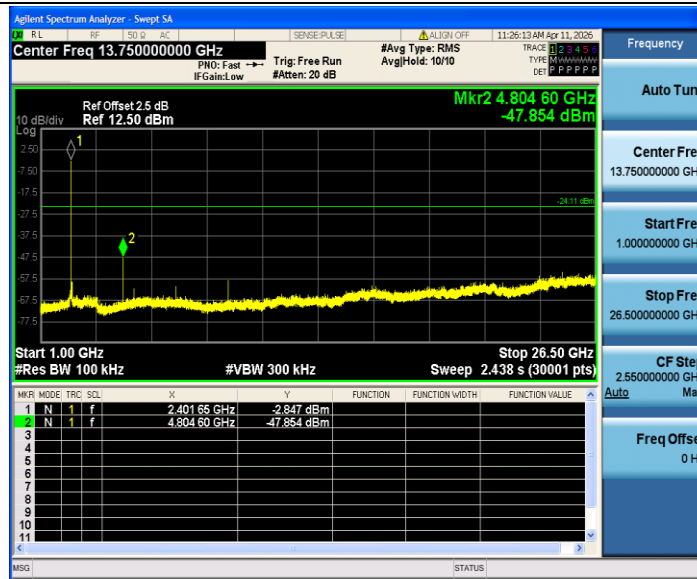
BLE_1M_Ant1_2402_0~Reference



BLE_1M_Ant1_2402_30~1000



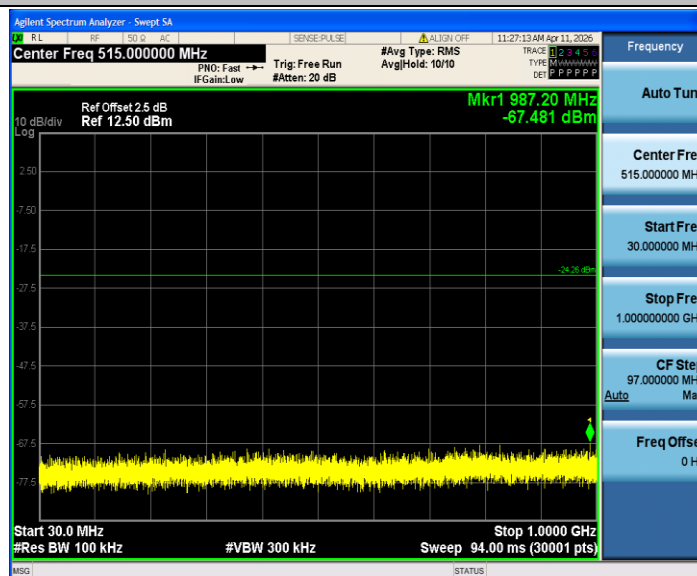
BLE_1M_Ant1_2402_1000~26500



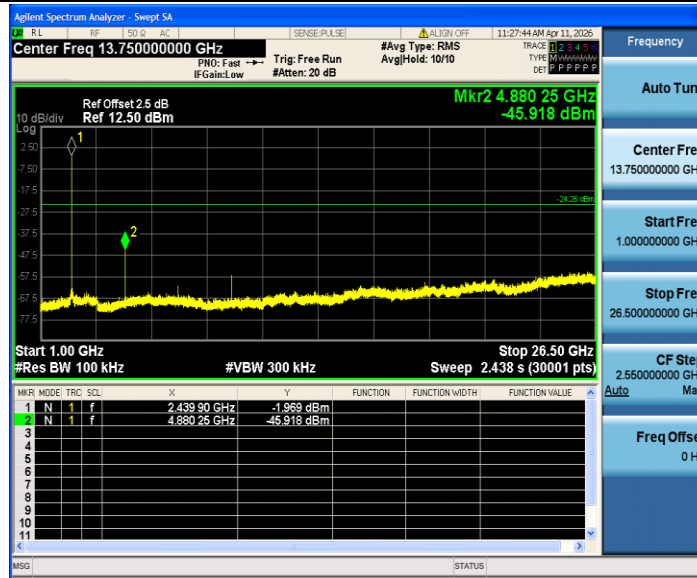
BLE_1M_Ant1_2440_0~Reference



BLE_1M_Ant1_2440_30~1000



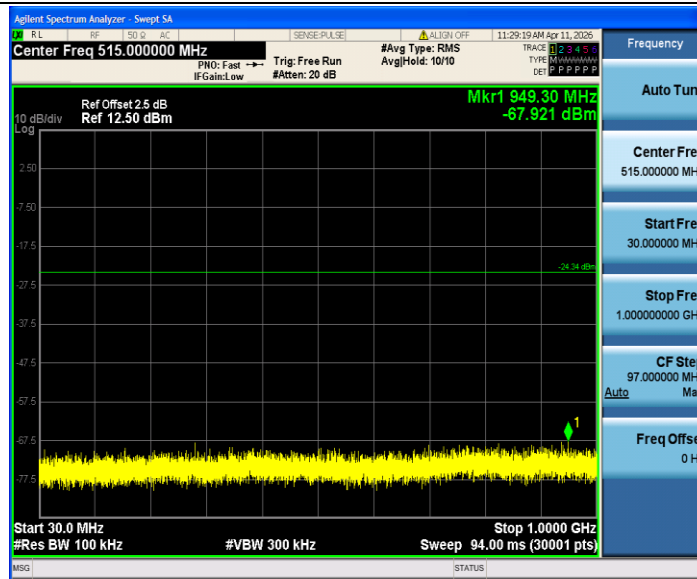
BLE_1M_Ant1_2440_1000~26500



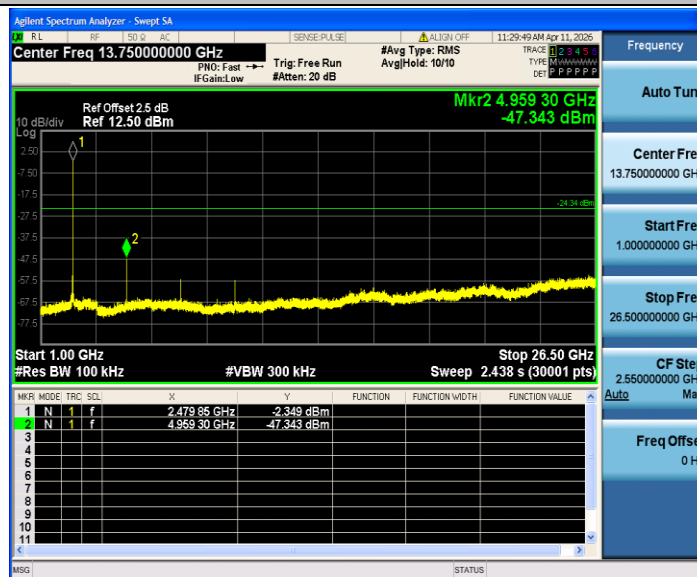
BLE_1M_Ant1_2480_0~Reference



BLE_1M_Ant1_2480_30~1000



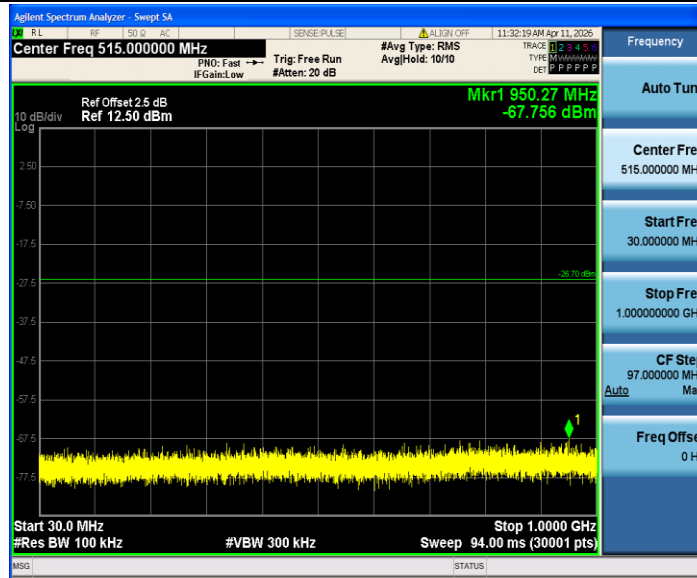
BLE_1M_Ant1_2480_1000~26500



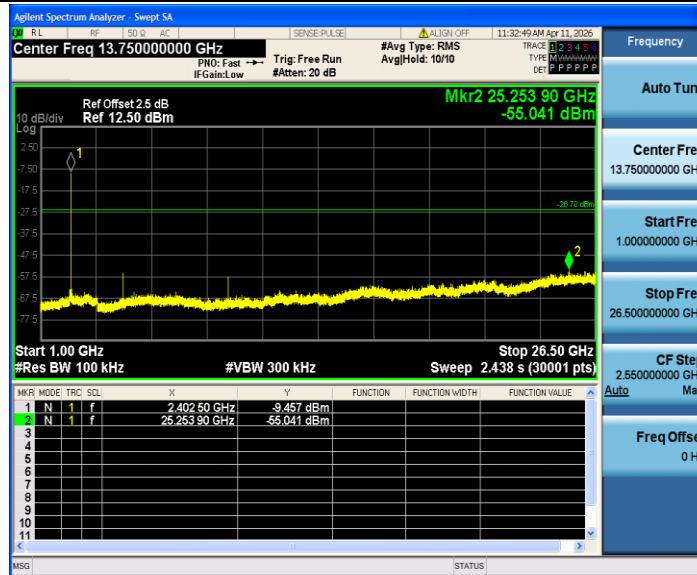
BLE_2M_Ant1_2402_0~Reference



BLE_2M_Ant1_2402_30~1000



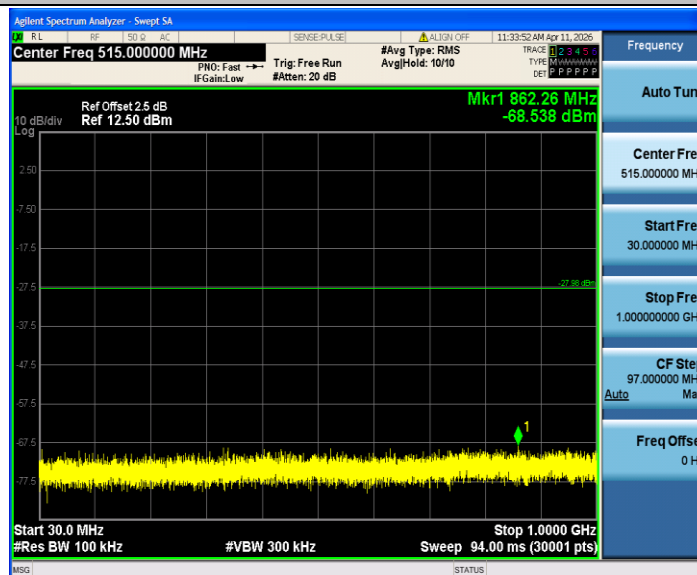
BLE_2M_Ant1_2402_1000~26500



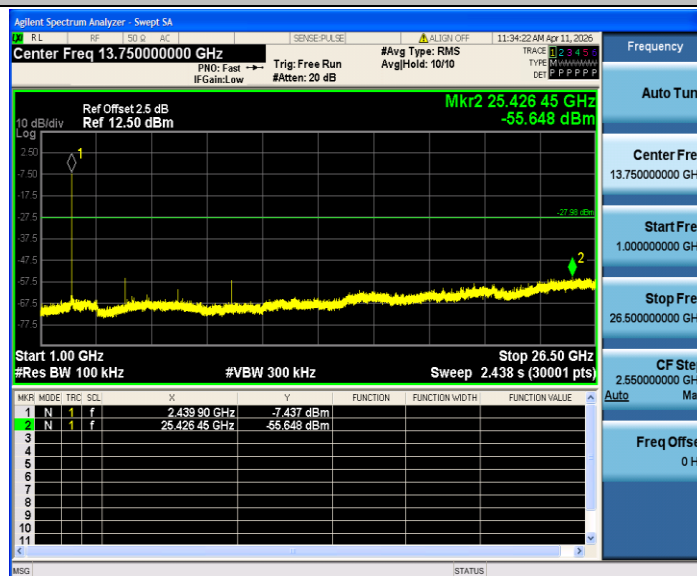
BLE_2M_Ant1_2440_0~Reference



BLE_2M_Ant1_2440_30~1000



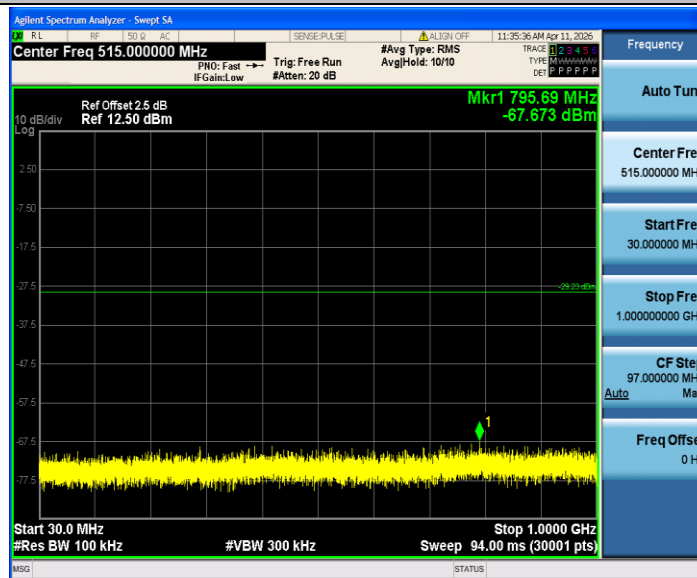
BLE_2M_Ant1_2440_1000~26500



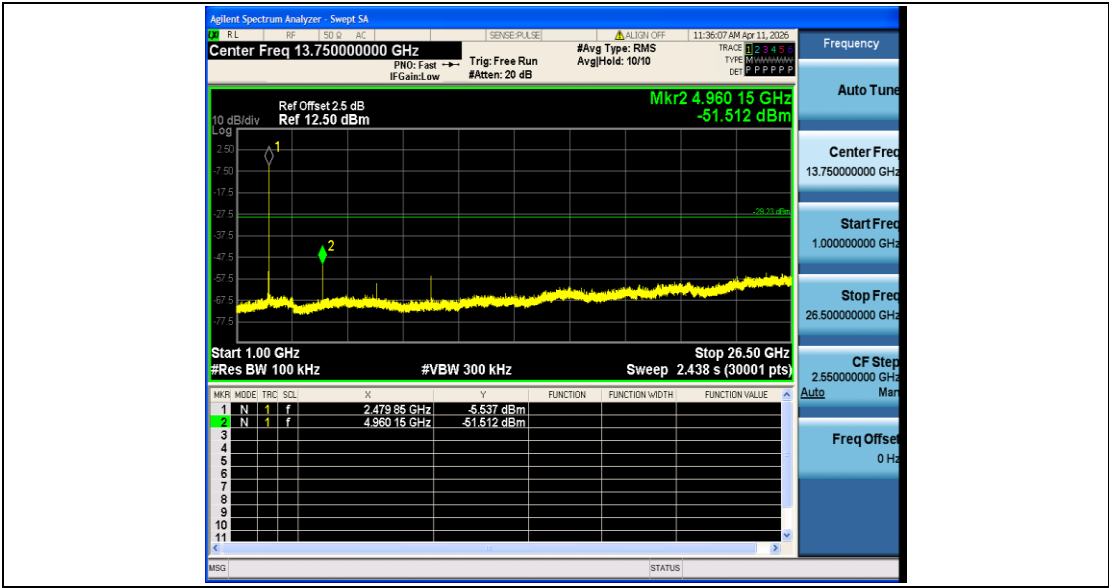
BLE_2M_Ant1_2480_0~Reference



BLE_2M_Ant1_2480_30~1000



BLE_2M_Ant1_2480_1000~26500



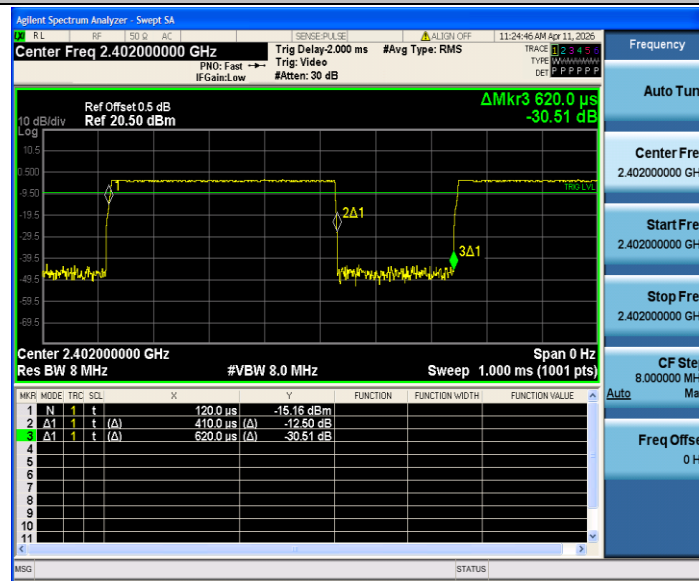
Appendix G: Duty Cycle

Test Result

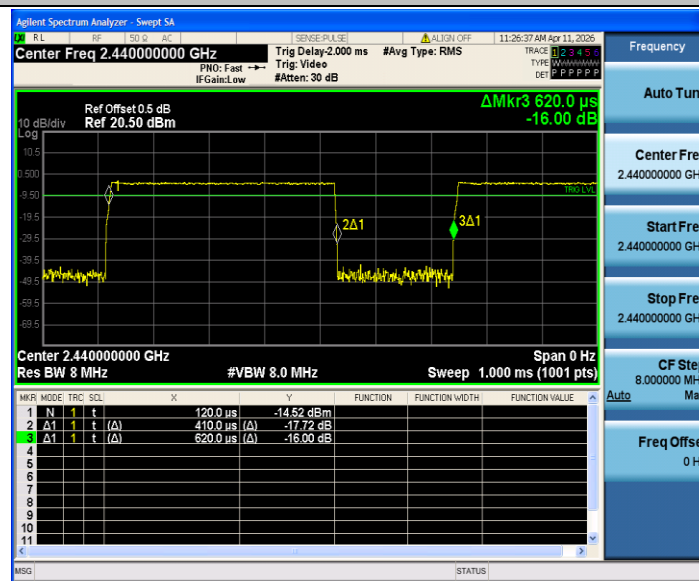
TestMode	Antenna	Freq(MHz)	ON Time [ms]	Period [ms]	X	DC [%]	xFactor	Limit	Verdict
BLE_1M	Ant1	2402	0.41	0.62	0.6613	66.13	1.80	---	---
		2440	0.41	0.62	0.6613	66.13	1.80	---	---
		2480	0.41	0.62	0.6613	66.13	1.80	---	---
BLE_2M	Ant1	2402	0.23	0.62	0.3710	37.10	4.31	---	---
		2440	0.23	0.62	0.3710	37.10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

Test Graphs

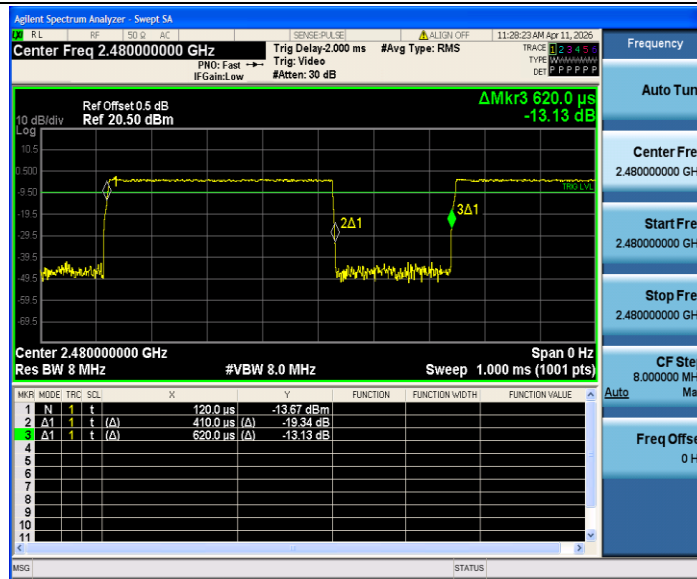
BLE_1M_Ant1_2402



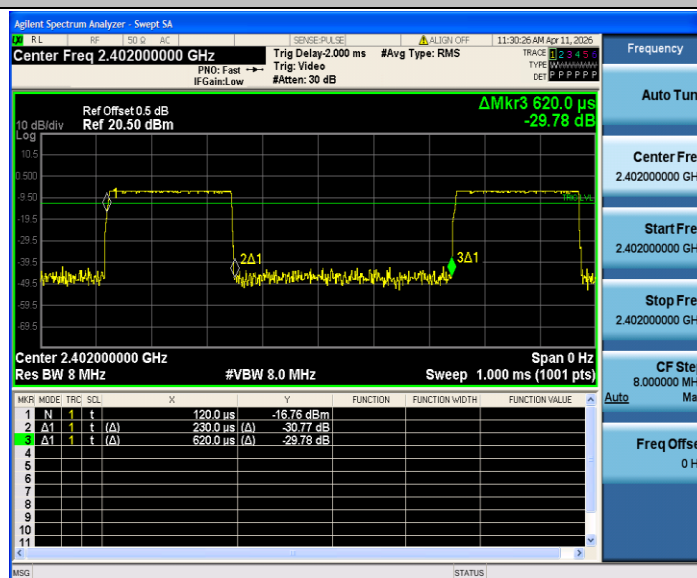
BLE_1M_Ant1_2440



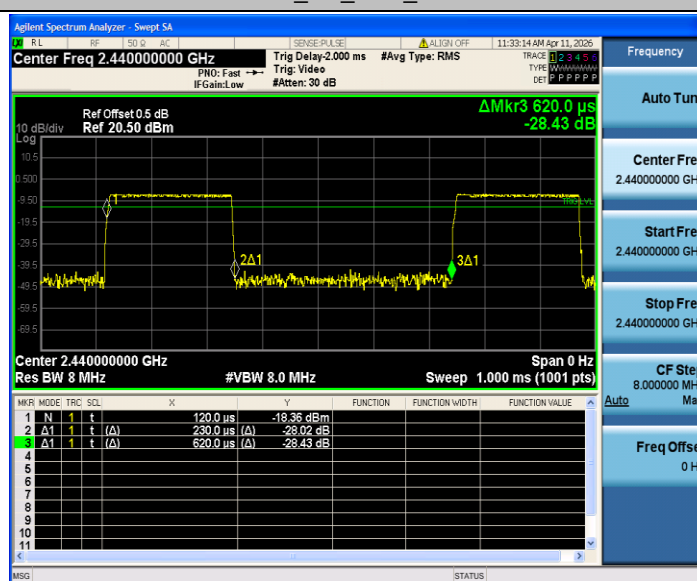
BLE_1M_Ant1_2480



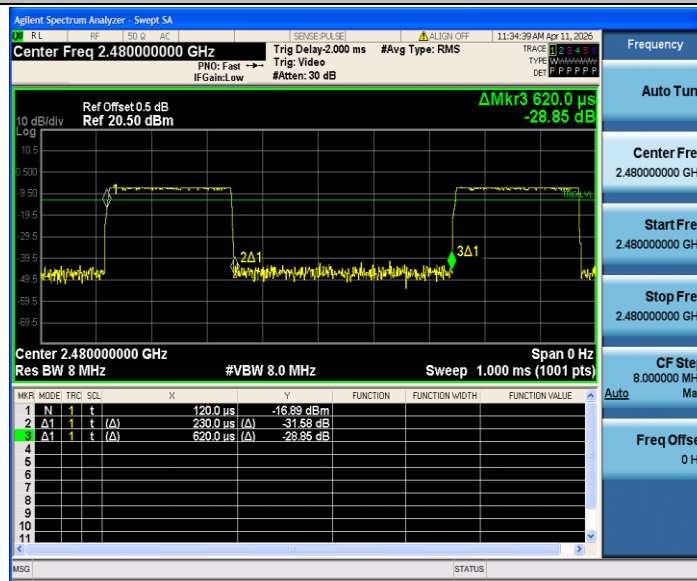
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480



Appendix H: Emissions in Restricted Bands

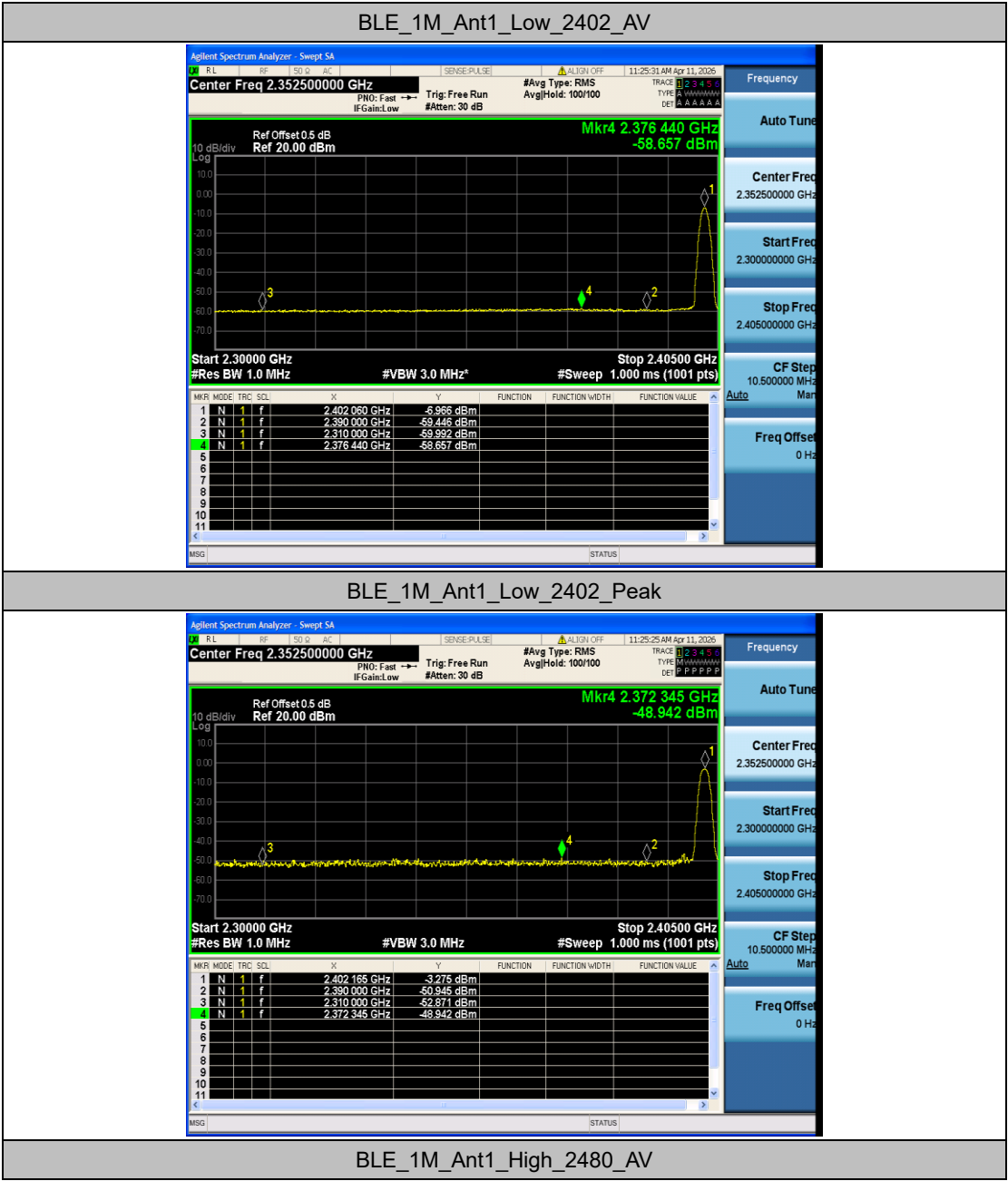
Test Result

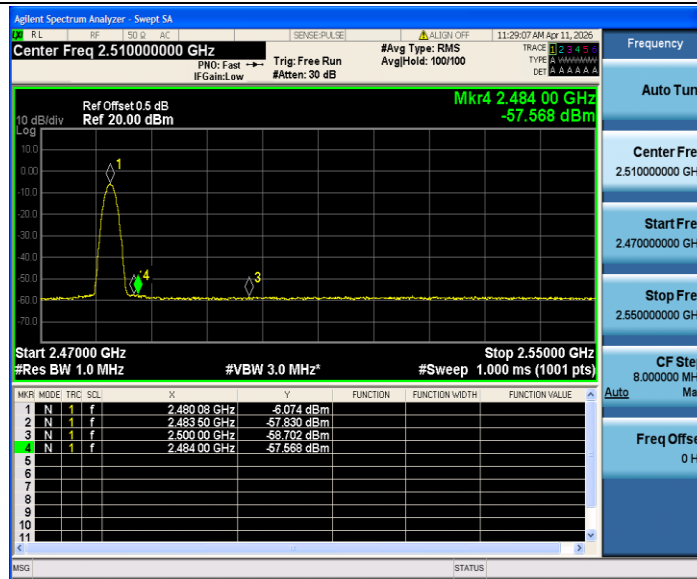
TestMode	Antenna	ChName	Freq(MHz)	Detector	Freq [MHz]	Result [dBm]	Gain [dB]	DC Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
BLE_1M	Ant1	Low	2402	AV	2310.000	-59.99	2.00	1.80	39.01	≤54	PASS
				AV	2376.440	-58.66	2.00	1.80	40.34	≤54	PASS
				AV	2390.000	-59.45	2.00	1.80	39.55	≤54	PASS
				Peak	2310.000	-52.87	2.00	0.00	44.33	≤74	PASS
				Peak	2372.345	-48.94	2.00	0.00	48.26	≤74	PASS
				Peak	2390.000	-50.95	2.00	0.00	46.25	≤74	PASS
		High	2480	AV	2483.500	-57.83	2.00	1.80	41.17	≤54	PASS
				AV	2484.000	-57.57	2.00	1.80	41.43	≤54	PASS
				AV	2500.000	-58.7	2.00	1.80	40.30	≤54	PASS
				Peak	2483.500	-51.25	2.00	0.00	45.95	≤74	PASS
				Peak	2484.960	-46.88	2.00	0.00	50.32	≤74	PASS
				Peak	2500.000	-50.18	2.00	0.00	47.02	≤74	PASS
BLE_2M	Ant1	Low	2402	AV	2310.000	-60.44	2.00	4.31	41.07	≤54	PASS
				AV	2381.690	-58.7	2.00	4.31	42.81	≤54	PASS
				AV	2390.000	-59.68	2.00	4.31	41.83	≤54	PASS
				Peak	2310.000	-51.48	2.00	0.00	45.72	≤74	PASS
				Peak	2363.420	-48.59	2.00	0.00	48.61	≤74	PASS
				Peak	2390.000	-51.19	2.00	0.00	46.01	≤74	PASS
		High	2480	AV	2483.500	-58.72	2.00	4.31	42.79	≤54	PASS
				AV	2484.080	-58.55	2.00	4.31	42.96	≤54	PASS
				AV	2500.000	-59.82	2.00	4.31	41.69	≤54	PASS
				Peak	2483.500	-51.97	2.00	0.00	45.23	≤74	PASS
				Peak	2495.280	-48.73	2.00	0.00	48.47	≤74	PASS
				Peak	2500.000	-52.52	2.00	0.00	44.68	≤74	PASS

Note:

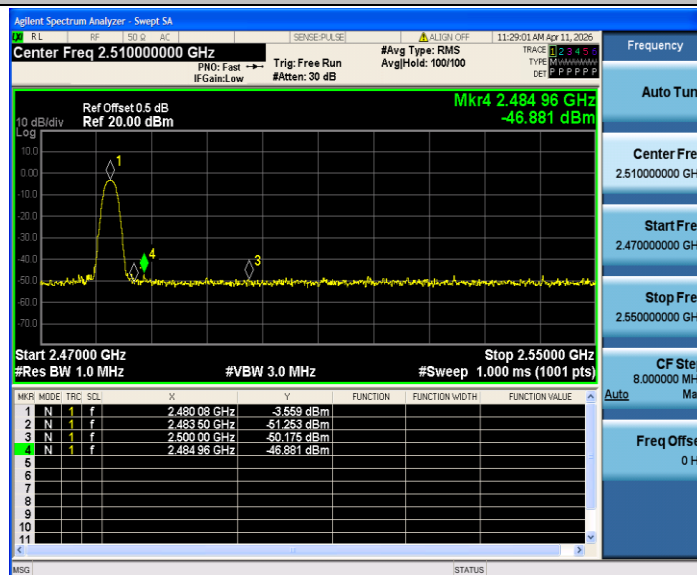
The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

Test Graphs

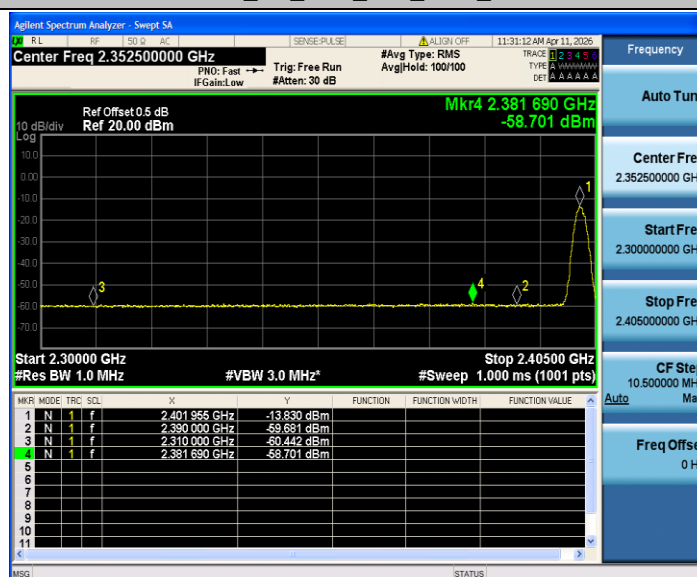




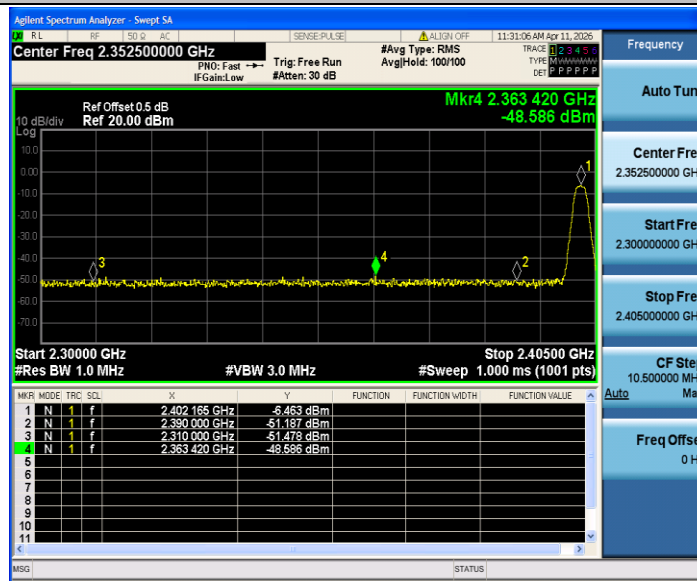
BLE_1M_Ant1_High_2480_Peak



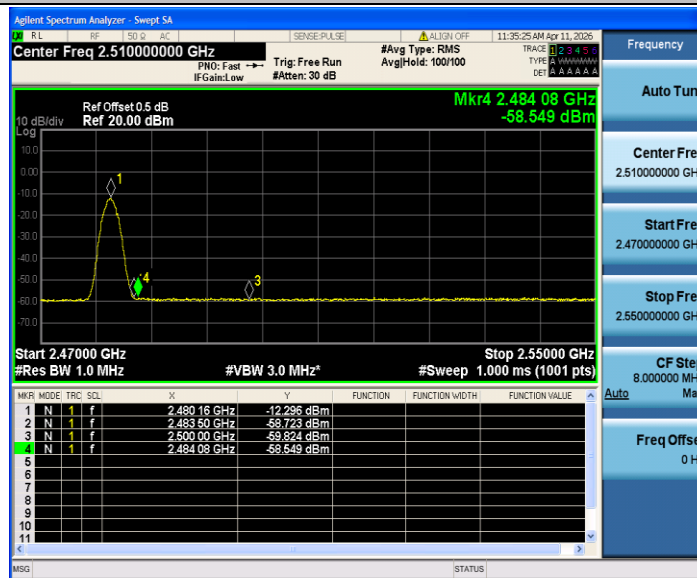
BLE_2M_Ant1_Low_2402_AV



BLE_2M_Ant1_Low_2402_Peak



BLE_2M_Ant1_High_2480_AV



BLE_2M_Ant1_High_2480_Peak

