

FCC Appendix RF Test Data for BLE

FCC ID : 2BQD4-AR99

Company : Shenzhen Xingyi Intelligent Technology Co., Ltd.

EUT : Smart Glasses

Model Number : AR99

Report No. : CTA26070200701

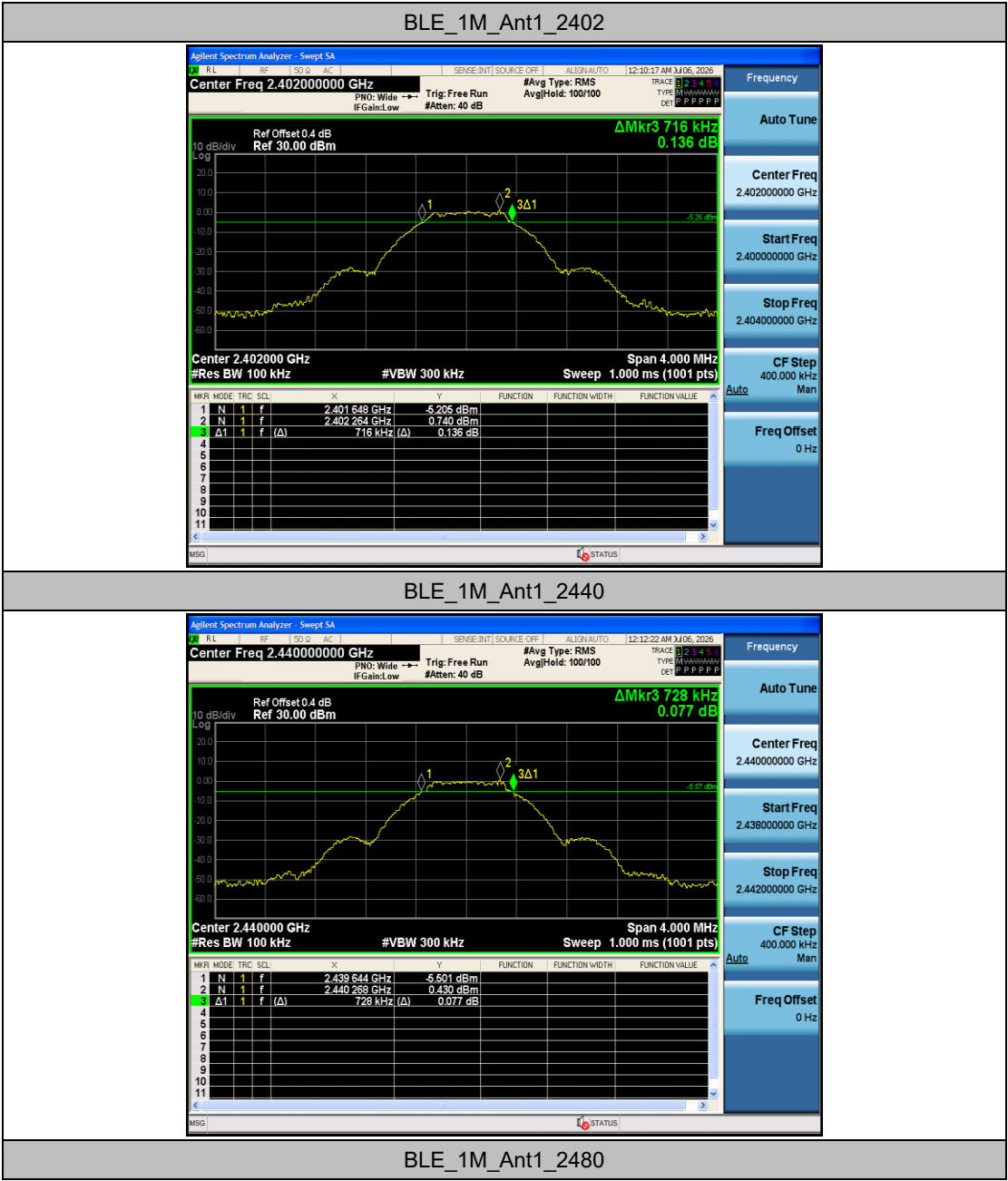
Reviewed By : Eric Wang

Appendix A: DTS Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.716	2401.648	2402.364	0.5	PASS
		2440	0.728	2439.644	2440.372	0.5	PASS
		2480	0.720	2479.648	2480.368	0.5	PASS
BLE_2M	Ant1	2402	1.120	2401.452	2402.572	0.5	PASS
		2440	1.124	2439.452	2440.576	0.5	PASS
		2480	1.112	2479.456	2480.568	0.5	PASS

Test Graphs





BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480

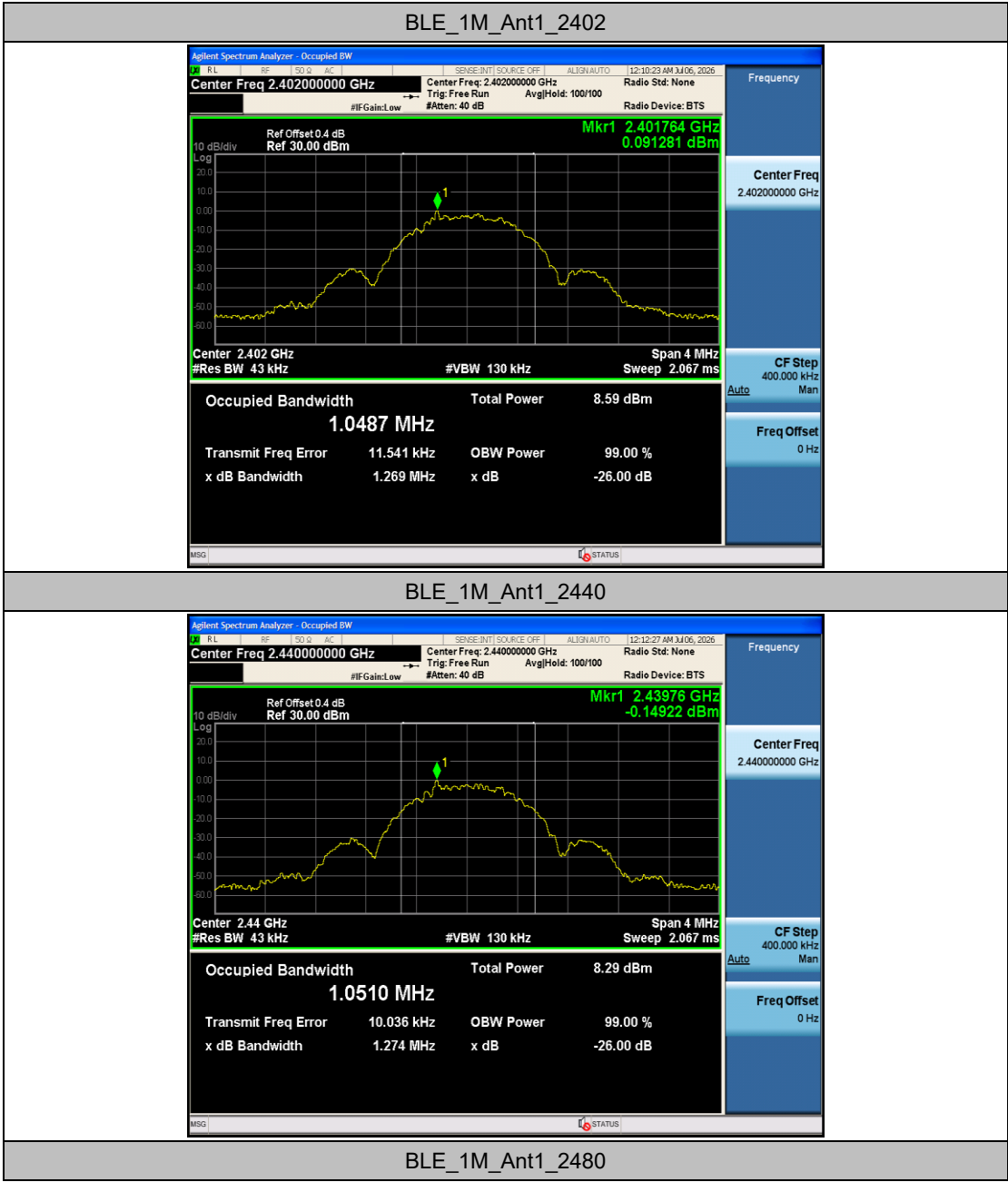


Appendix B: Occupied Channel Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0487	2401.4872	2402.5359	---	---
		2440	1.0510	2439.4845	2440.5355	---	---
		2480	1.0298	2479.4944	2480.5242	---	---
BLE_2M	Ant1	2402	1.9412	2401.0476	2402.9888	---	---
		2440	1.9505	2439.0420	2440.9925	---	---
		2480	1.9558	2479.0403	2480.9961	---	---

Test Graphs

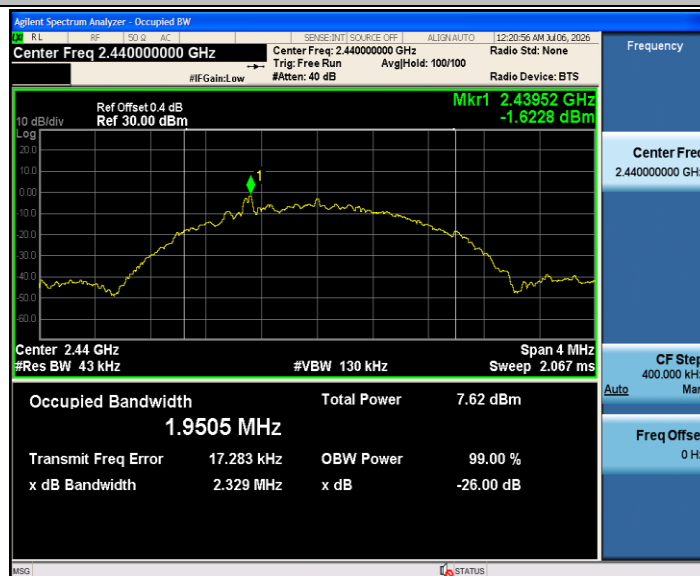




BLE_2M_Ant1_2402



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	1.84	≤30	PASS
		2440	1.61	≤30	PASS
		2480	1.02	≤30	PASS
BLE_2M	Ant1	2402	1.67	≤30	PASS
		2440	1.38	≤30	PASS
		2480	0.83	≤30	PASS

Appendix D: Maximum power spectral density

Test Result

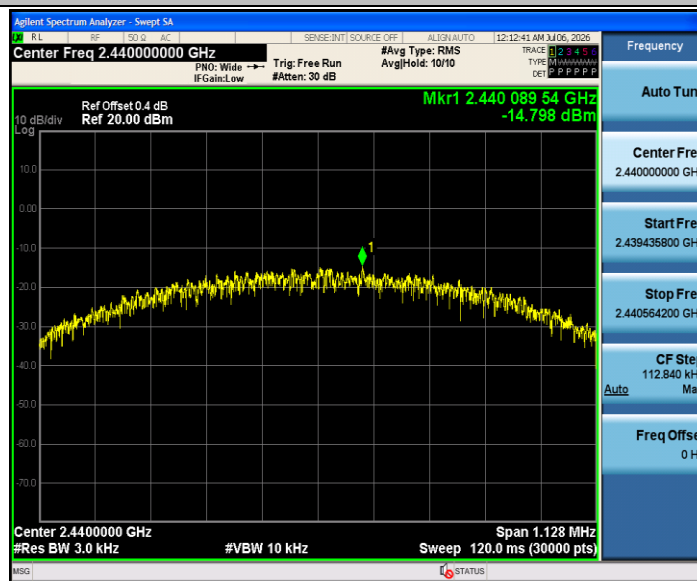
TestMode	Antenna	Freq(MHz)	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-14.31	≤8.00	PASS
		2440	-14.80	≤8.00	PASS
		2480	-14.82	≤8.00	PASS
BLE_2M	Ant1	2402	-16.75	≤8.00	PASS
		2440	-17.08	≤8.00	PASS
		2480	-17.79	≤8.00	PASS

Test Graphs

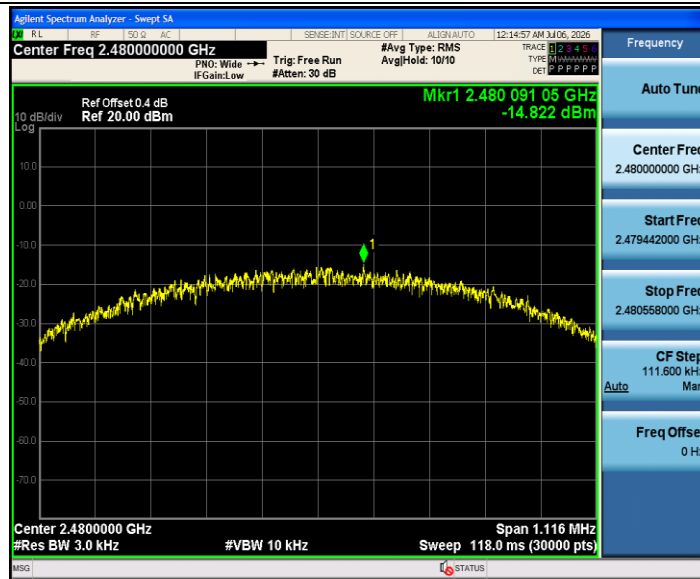
BLE_1M_Ant1_2402



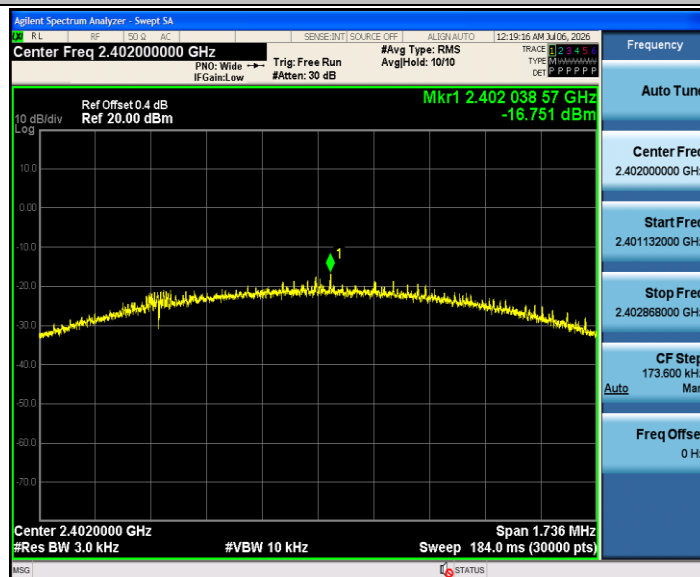
BLE_1M_Ant1_2440



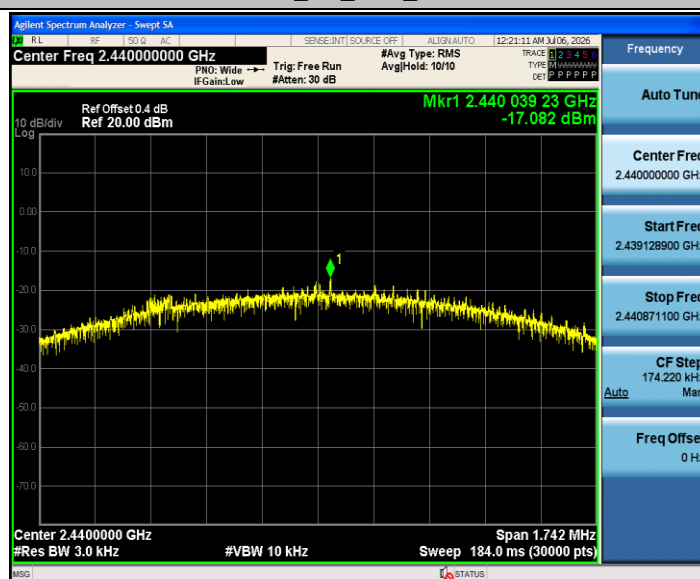
BLE_1M_Ant1_2480



BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480



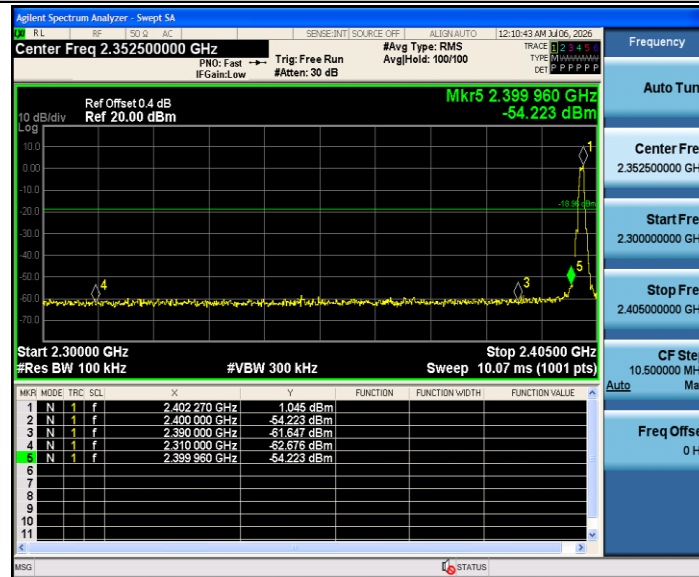
Appendix E: Band edge measurements

Test Result

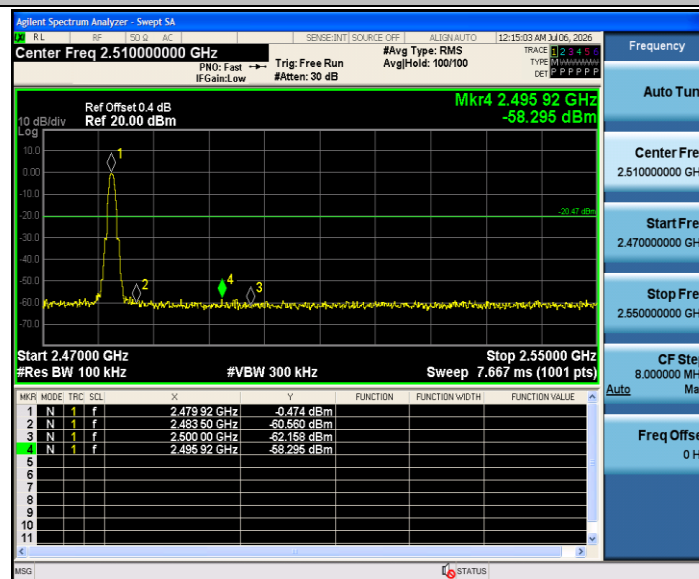
TestMode	Antenna	ChName	Freq(MHz)	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	1.05	-54.22	≤ -18.96	PASS
		High	2480	-0.47	-58.3	≤ -20.47	PASS
BLE_2M	Ant1	Low	2402	0.34	-39.23	≤ -19.66	PASS
		High	2480	-1.71	-57.94	≤ -21.71	PASS

Test Graphs

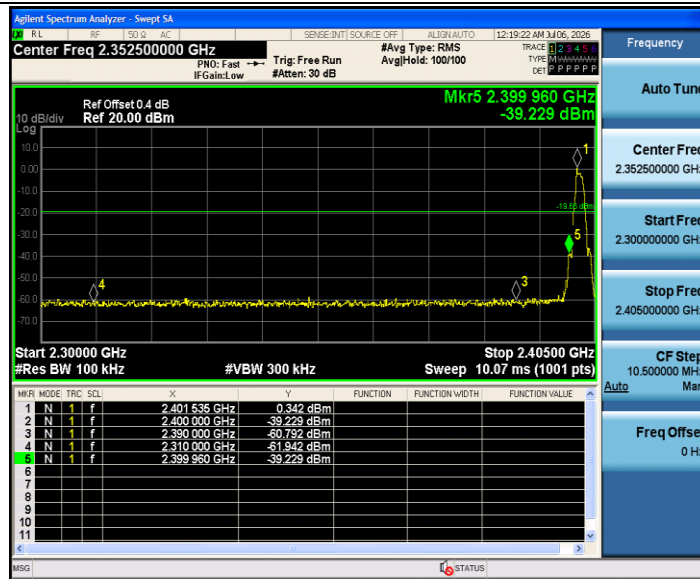
BLE_1M_Ant1_Low_2402



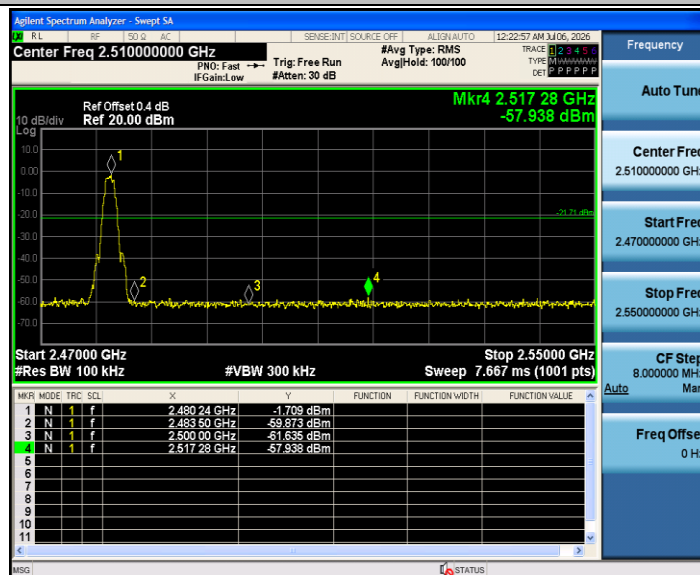
BLE_1M_Ant1_High_2480



BLE_2M_Ant1_Low_2402



BLE_2M_Ant1_High_2480

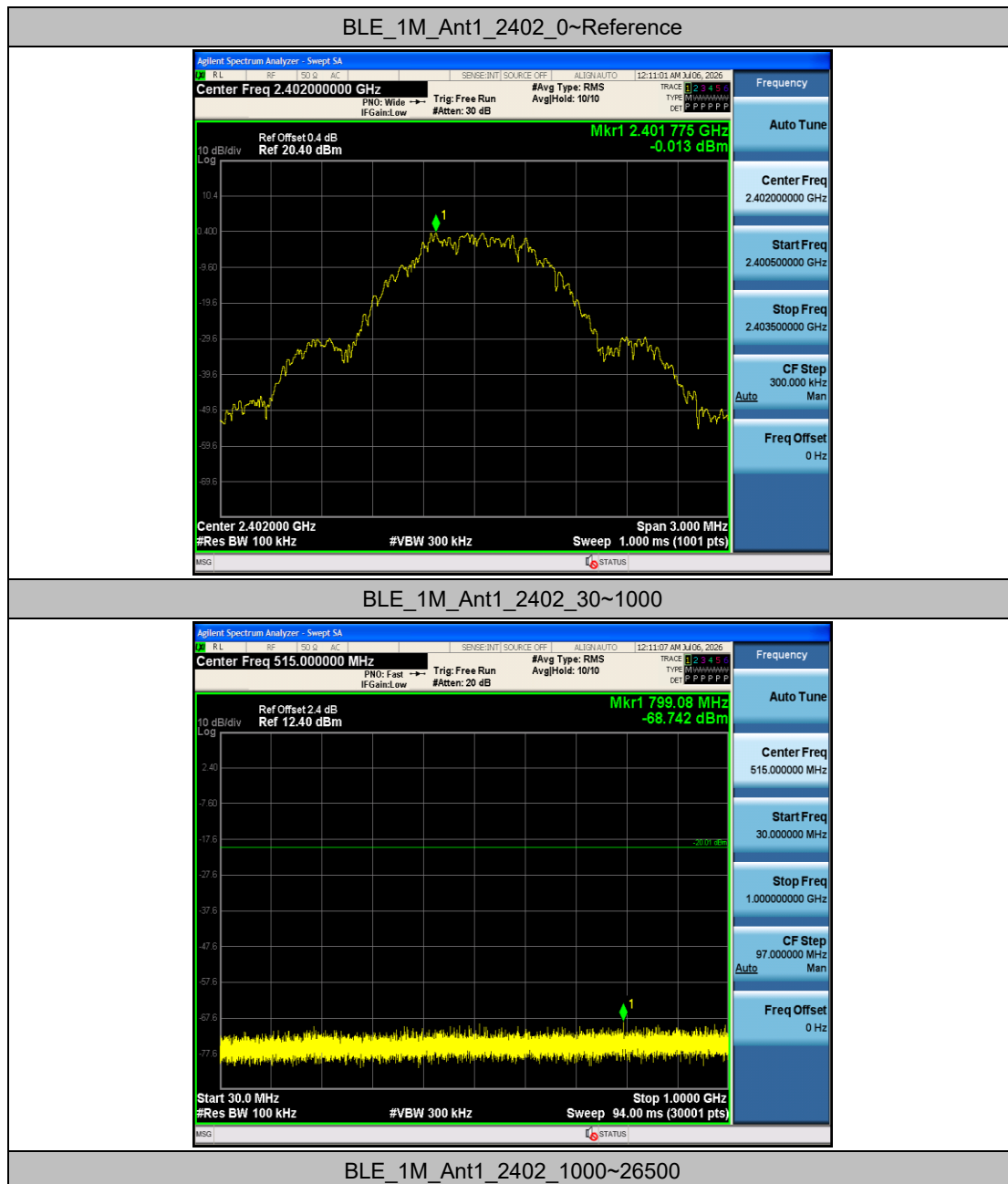


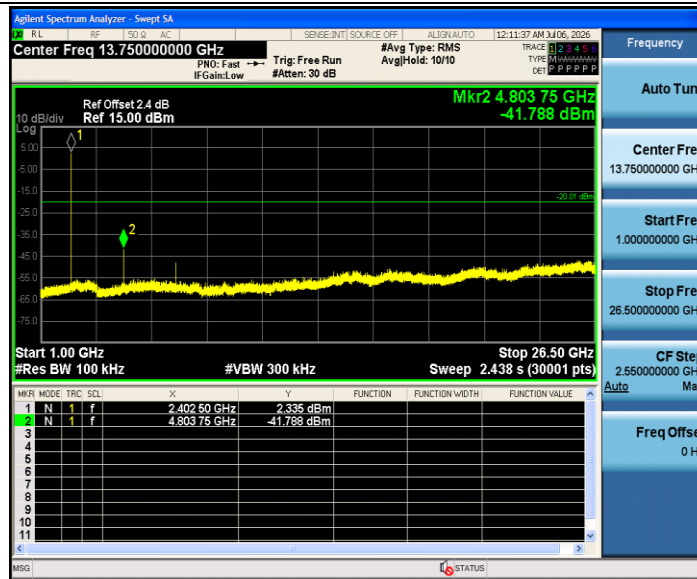
Appendix F: Conducted Spurious Emission

Test Result

TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	-0.01	-0.01	---	PASS
			30~1000	-0.01	-68.74	≤-20.01	PASS
			1000~26500	-0.01	-41.79	≤-20.01	PASS
		2440	Reference	-0.03	-0.03	---	PASS
			30~1000	-0.03	-68.99	≤-20.03	PASS
			1000~26500	-0.03	-43.11	≤-20.03	PASS
		2480	Reference	-0.89	-0.89	---	PASS
			30~1000	-0.89	-68.69	≤-20.89	PASS
			1000~26500	-0.89	-44.14	≤-20.89	PASS
BLE_2M	Ant1	2402	Reference	-1.56	-1.56	---	PASS
			30~1000	-1.56	-68.4	≤-21.56	PASS
			1000~26500	-1.56	-43.85	≤-21.56	PASS
		2440	Reference	-2.60	-2.60	---	PASS
			30~1000	-2.60	-69.2	≤-22.6	PASS
			1000~26500	-2.60	-44.99	≤-22.6	PASS
		2480	Reference	-0.34	-0.34	---	PASS
			30~1000	-0.34	-69.43	≤-20.34	PASS
			1000~26500	-0.34	-44.51	≤-20.34	PASS

Test Graphs

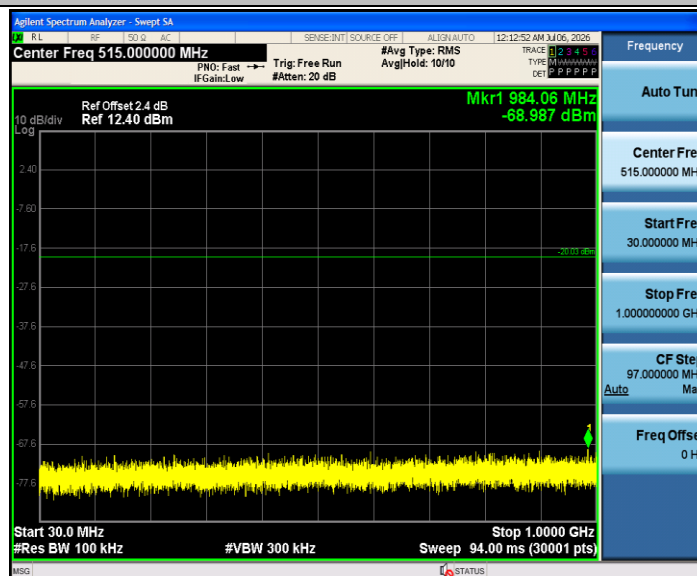




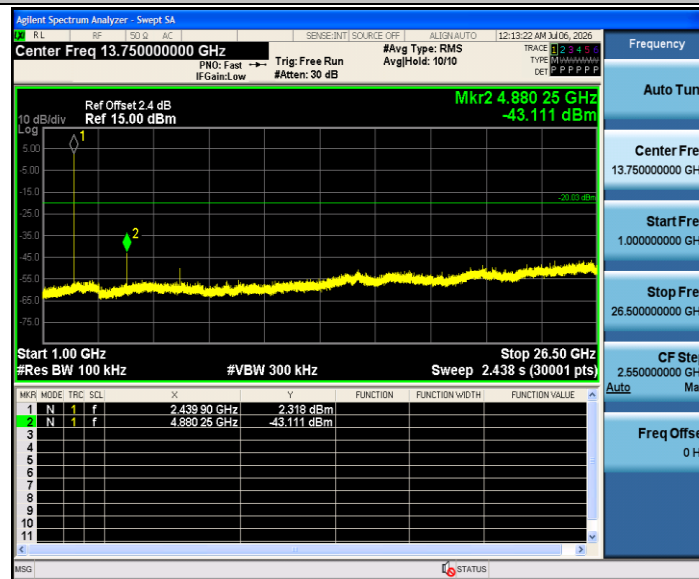
BLE_1M_Ant1_2440_0~Reference



BLE_1M_Ant1_2440_30~1000



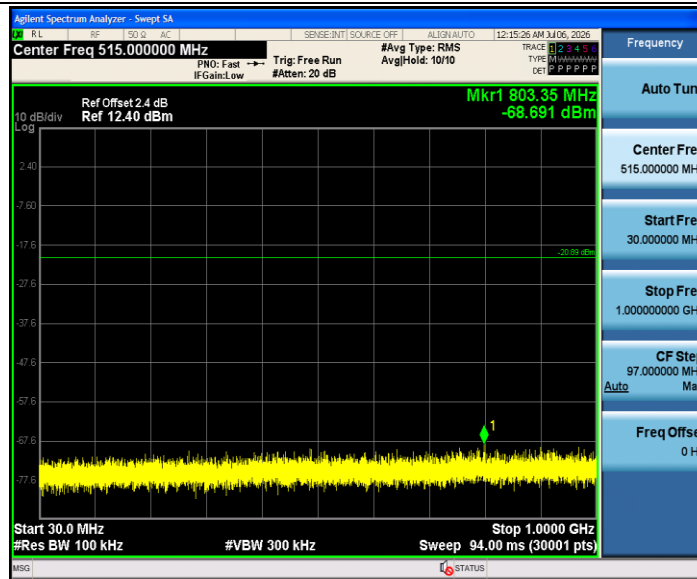
BLE_1M_Ant1_2440_1000~26500



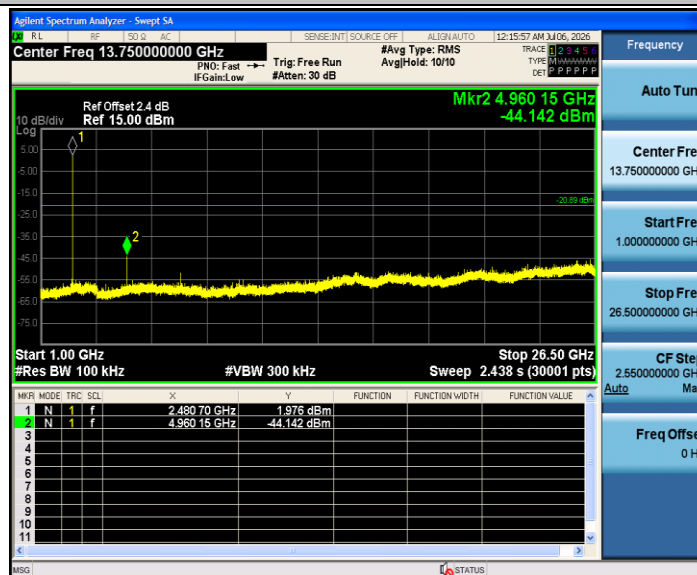
BLE_1M_Ant1_2480_0~Reference



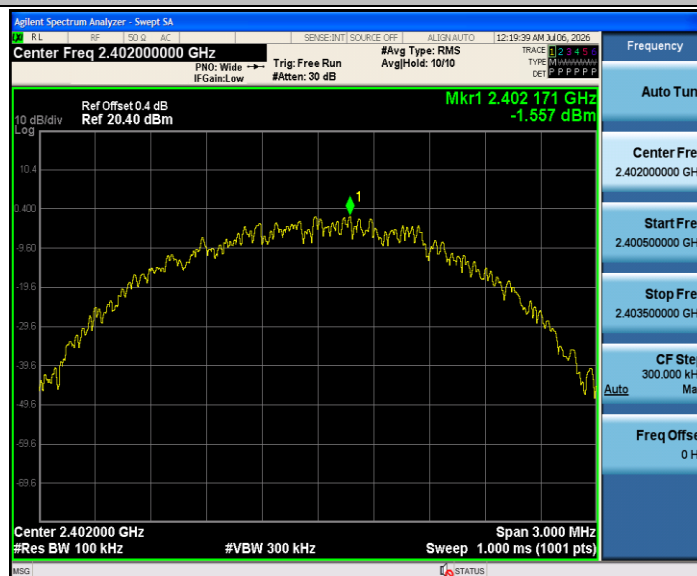
BLE_1M_Ant1_2480_30~1000



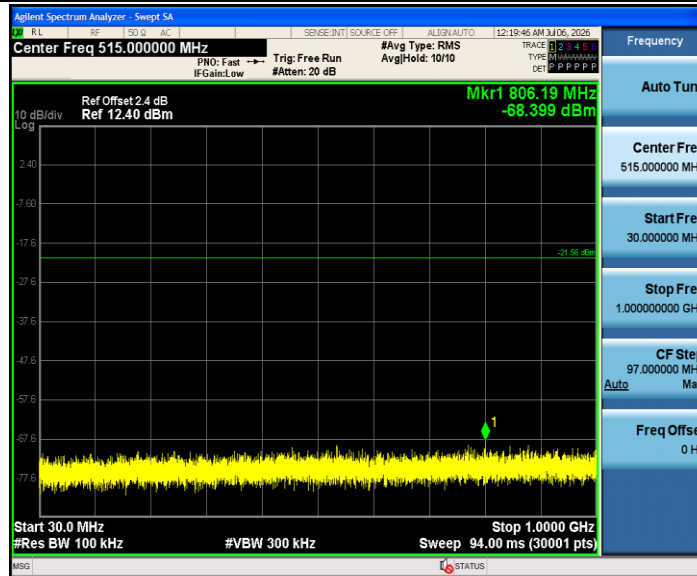
BLE_1M_Ant1_2480_1000~26500



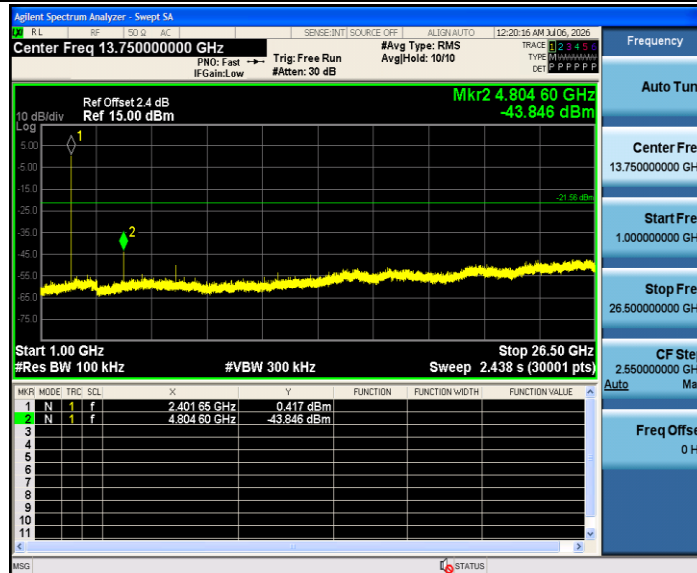
BLE_2M_Ant1_2402_0~Reference



BLE_2M_Ant1_2402_30~1000



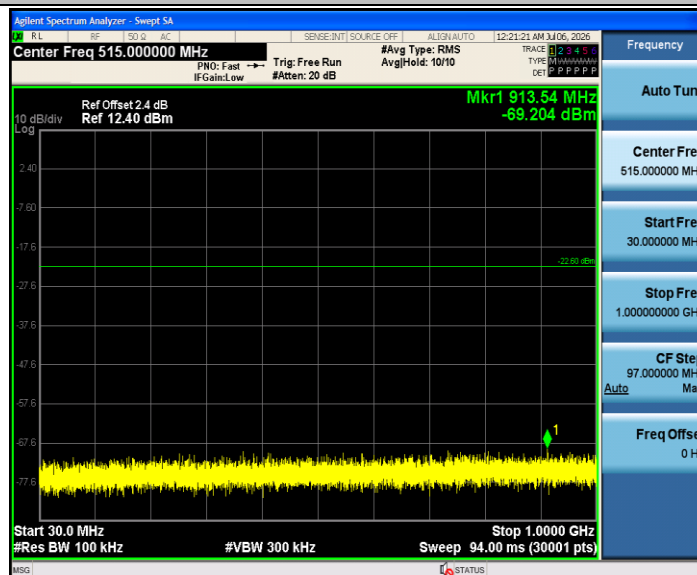
BLE_2M_Ant1_2402_1000~26500



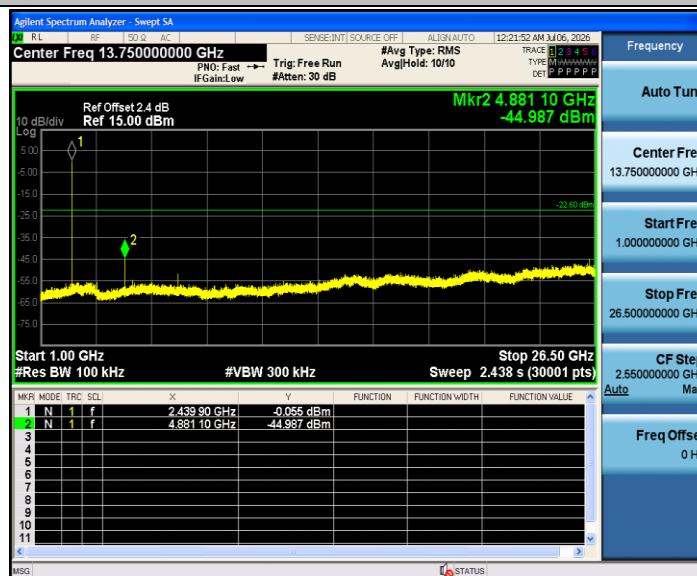
BLE_2M_Ant1_2440_0~Reference



BLE_2M_Ant1_2440_30~1000



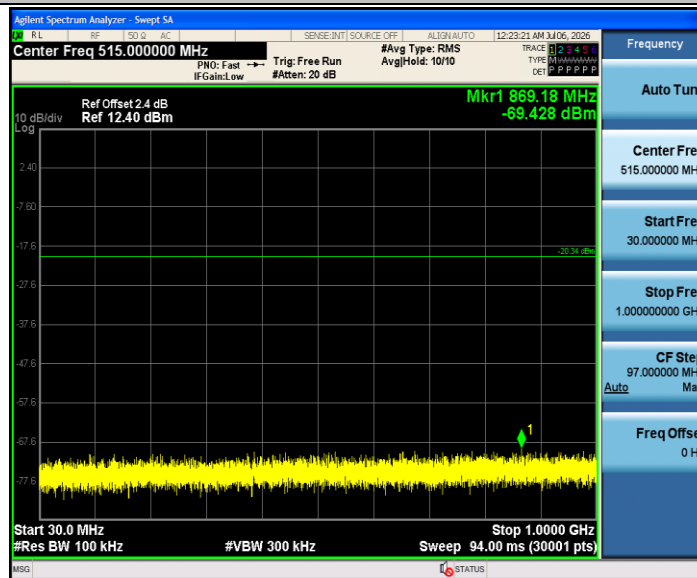
BLE_2M_Ant1_2440_1000~26500



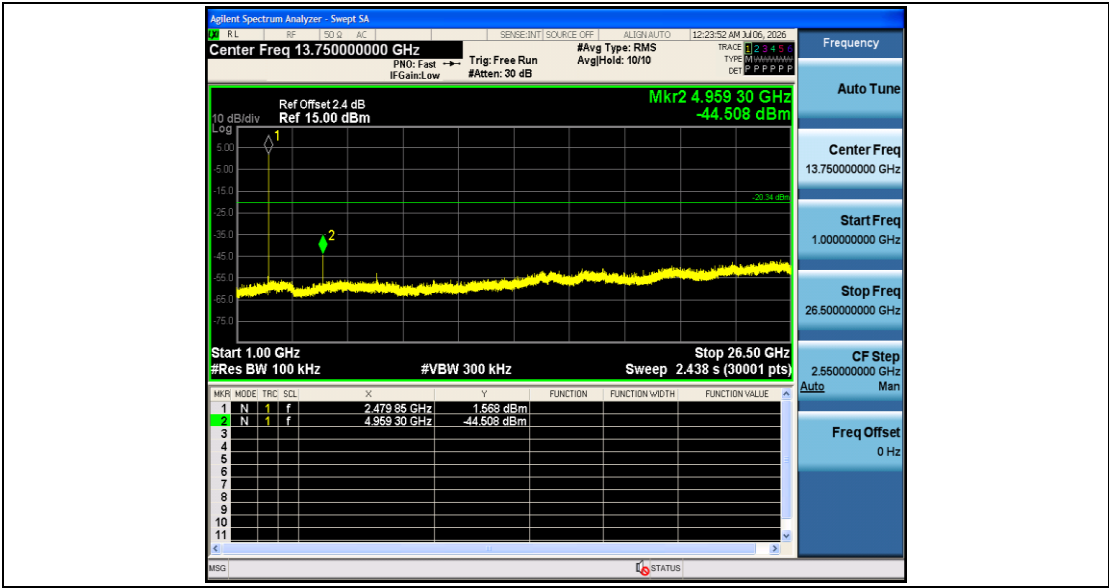
BLE_2M_Ant1_2480_0~Reference



BLE_2M_Ant1_2480_30~1000



BLE_2M_Ant1_2480_1000~26500

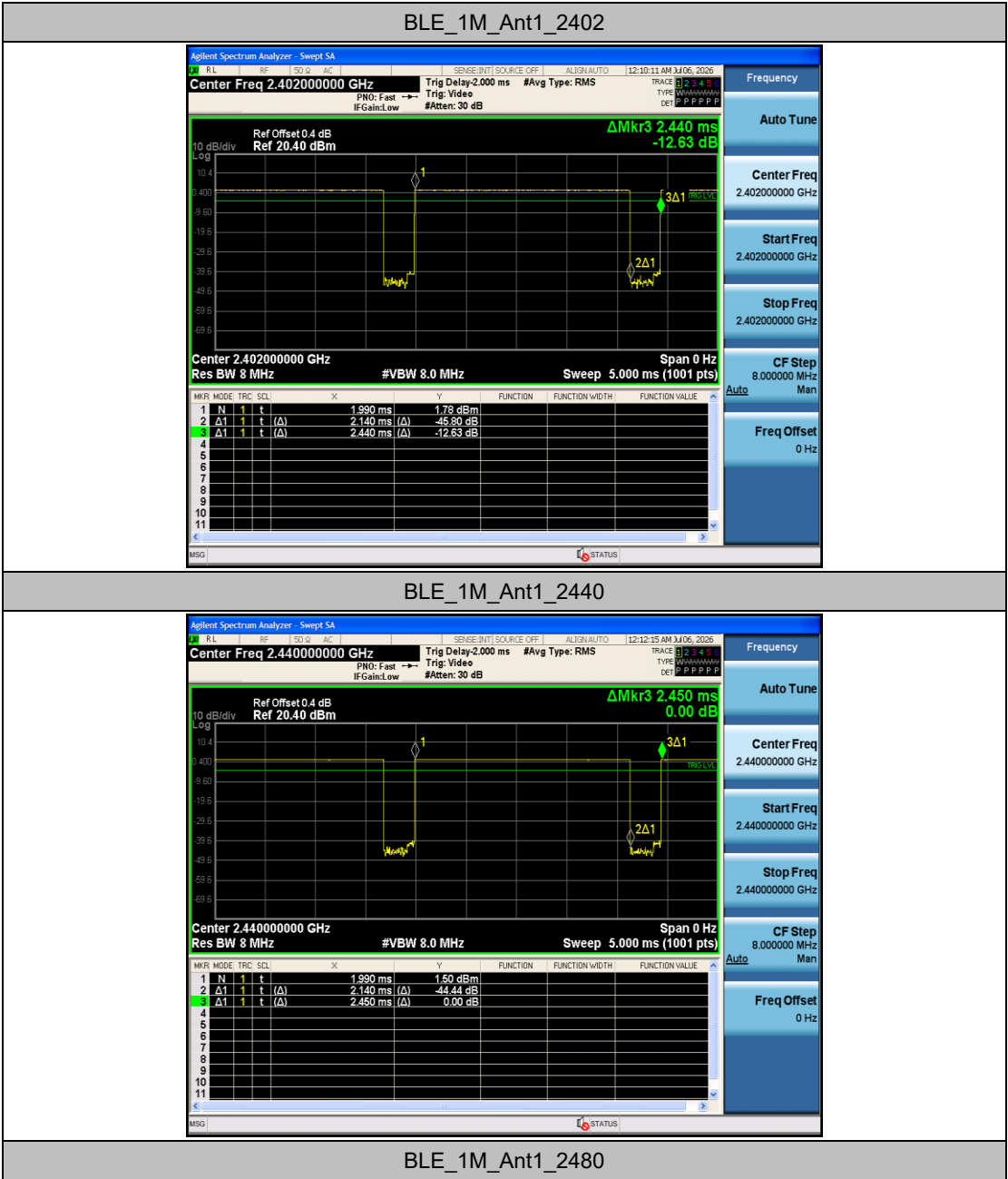


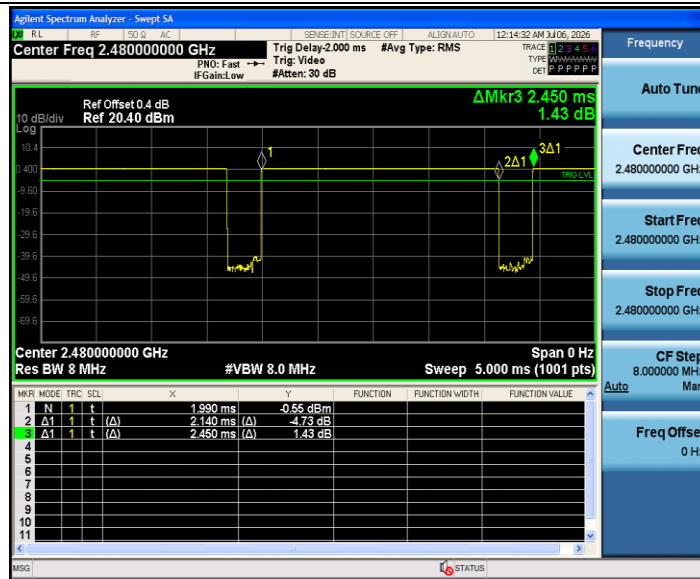
Appendix G: Duty Cycle

Test Result

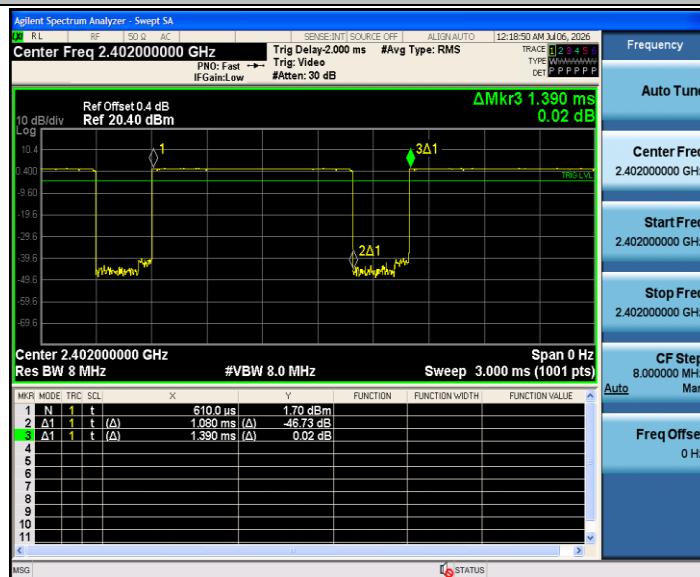
TestMode	Antenna	Freq(MHz)	ON Time [ms]	Period [ms]	X	DC [%]	xFactor	Limit	Verdict
BLE_1M	Ant1	2402	2.14	2.44	0.8770	87.70	0.57	---	---
		2440	2.14	2.45	0.8735	87.35	0.59	---	---
		2480	2.14	2.45	0.8735	87.35	0.59	---	---
BLE_2M	Ant1	2402	1.08	1.39	0.7770	77.70	1.10	---	---
		2440	1.08	1.39	0.7770	77.70	1.10	---	---
		2480	1.09	1.39	0.7842	78.42	1.06	---	---

Test Graphs

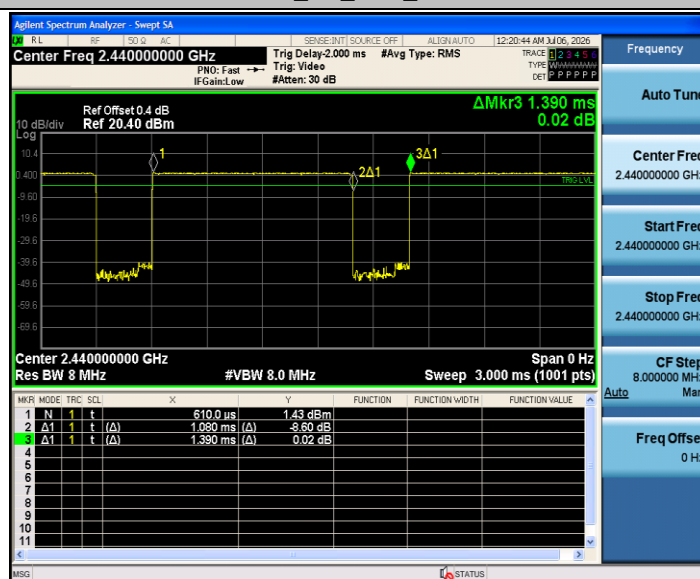




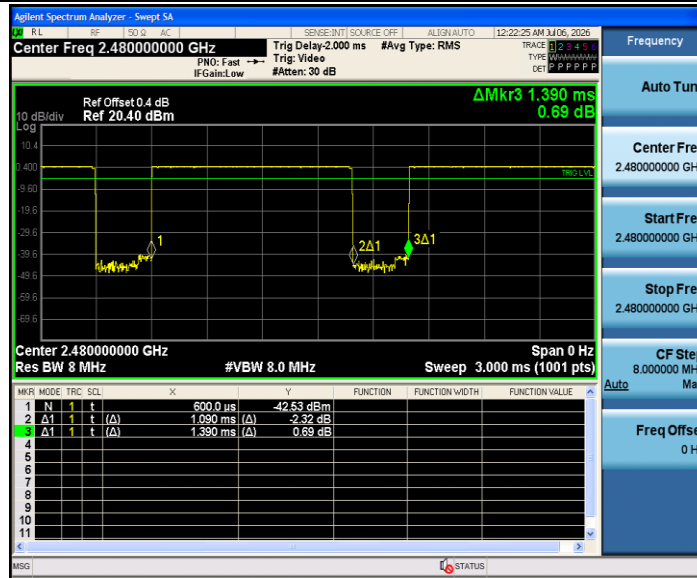
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480



Appendix H: Emissions in Restricted Bands

Test Result

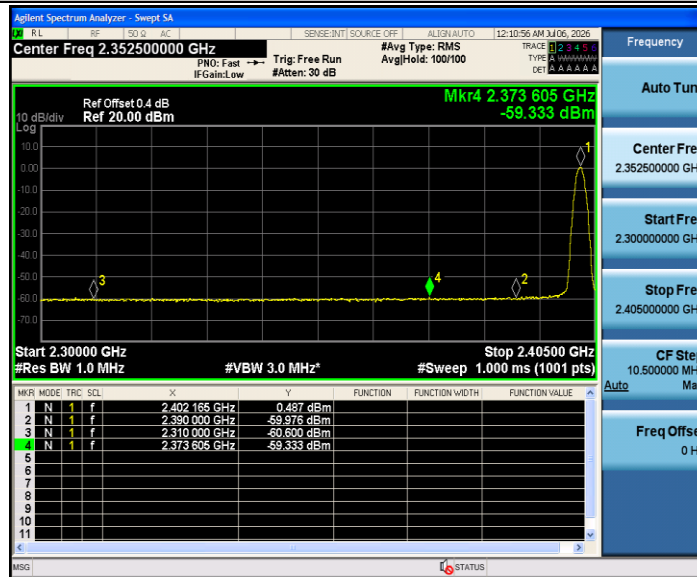
TestMode	Antenna	Channel Name	Freq(MHz)	Detector	Freq [MHz]	Result [dBm]	Gain [dB]	DC Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
BLE_1M	Ant1	Low	2402	AV	2310.000	-60.6	2.00	0.57	37.17	≤54	PASS
				AV	2373.605	-59.33	2.00	0.57	38.44	≤54	PASS
				AV	2390.000	-59.98	2.00	0.57	37.79	≤54	PASS
				Peak	2310.000	-52.68	2.00	0.00	44.52	≤74	PASS
				Peak	2319.740	-48.49	2.00	0.00	48.71	≤74	PASS
				Peak	2390.000	-52.23	2.00	0.00	44.97	≤74	PASS
		High	2480	AV	2483.500	-59.03	2.00	0.59	38.76	≤54	PASS
				AV	2484.000	-58.56	2.00	0.59	39.23	≤54	PASS
				AV	2500.000	-59.56	2.00	0.59	38.23	≤54	PASS
				Peak	2483.500	-51.12	2.00	0.00	46.08	≤74	PASS
				Peak	2484.240	-48.75	2.00	0.00	48.45	≤74	PASS
				Peak	2500.000	-51.83	2.00	0.00	45.37	≤74	PASS
BLE_2M	Ant1	Low	2402	AV	2310.000	-60.79	2.00	1.10	37.51	≤54	PASS
				AV	2370.665	-59.32	2.00	1.10	38.98	≤54	PASS
				AV	2390.000	-59.39	2.00	1.10	38.91	≤54	PASS
				Peak	2310.000	-52.81	2.00	0.00	44.39	≤74	PASS
				Peak	2380.850	-49.61	2.00	0.00	47.59	≤74	PASS
				Peak	2390.000	-51.96	2.00	0.00	45.24	≤74	PASS
		High	2480	AV	2483.500	-58.73	2.00	1.06	39.53	≤54	PASS
				AV	2483.520	-58.73	2.00	1.06	39.53	≤54	PASS
				AV	2500.000	-59.64	2.00	1.06	38.62	≤54	PASS
				Peak	2483.500	-49.1	2.00	0.00	48.10	≤74	PASS
				Peak	2483.520	-49.1	2.00	0.00	48.10	≤74	PASS
				Peak	2500.000	-52.55	2.00	0.00	44.65	≤74	PASS

Note:

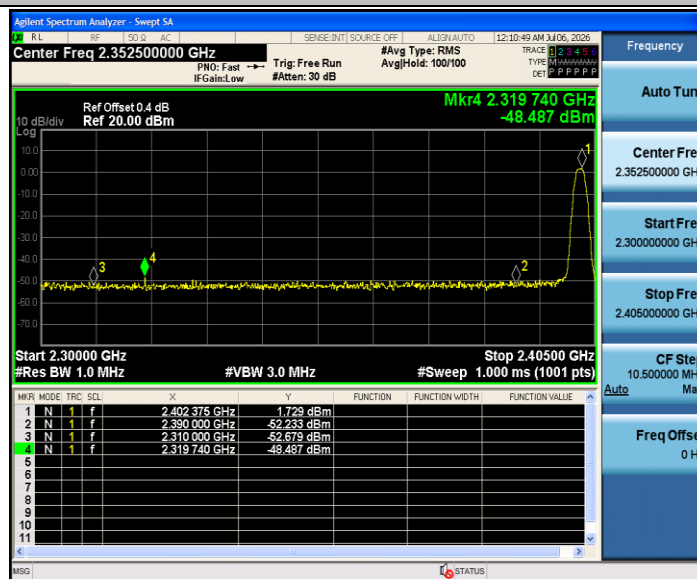
1. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

Test Graphs

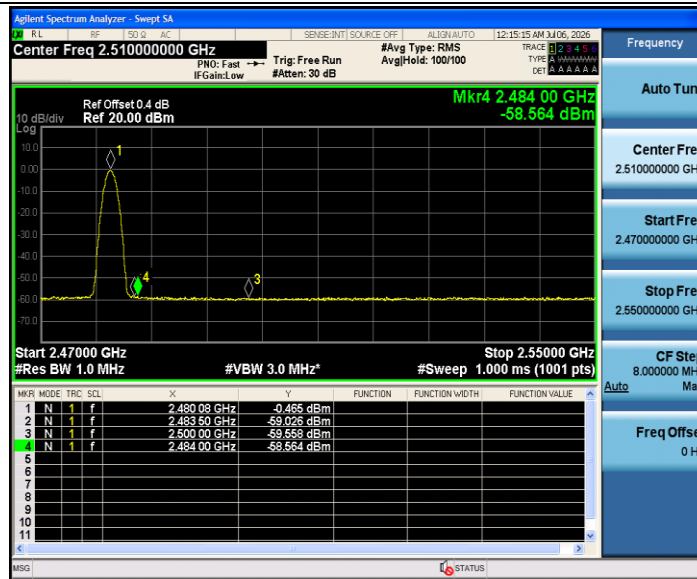
BLE_1M_Ant1_Low_2402_AV



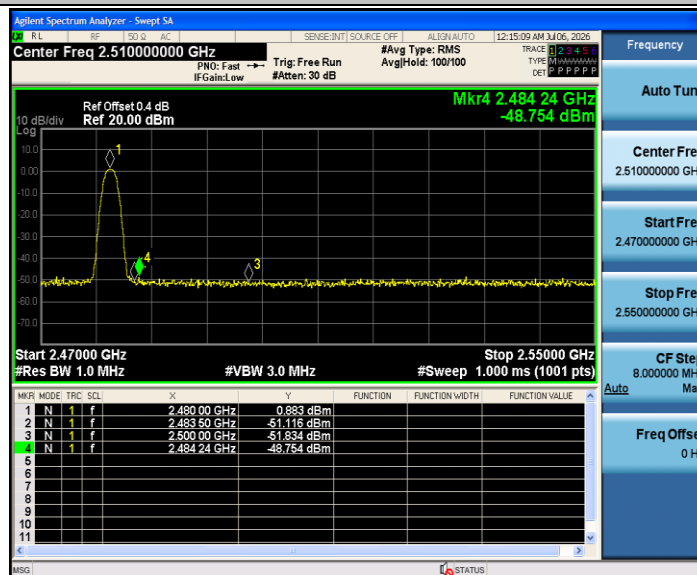
BLE_1M_Ant1_Low_2402_Peak



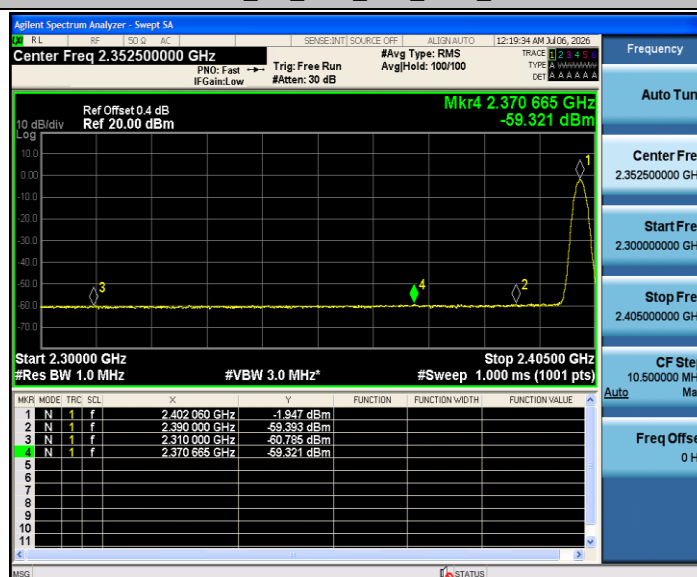
BLE_1M_Ant1_High_2480_AV



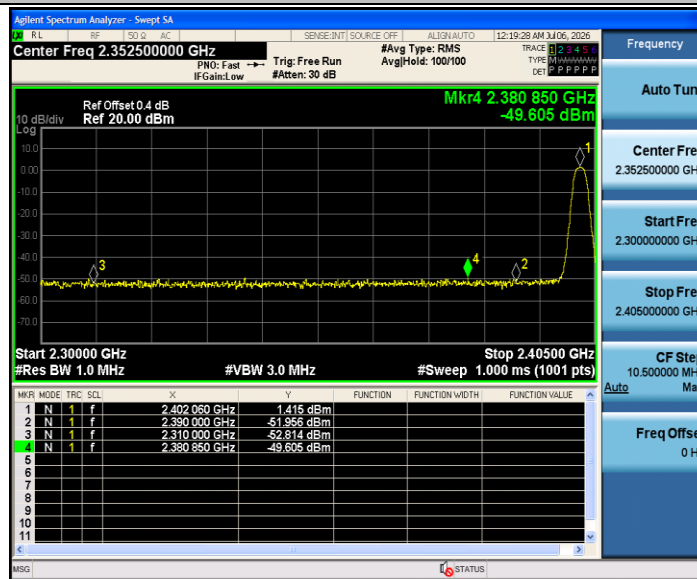
BLE_1M_Ant1_High_2480_Peak



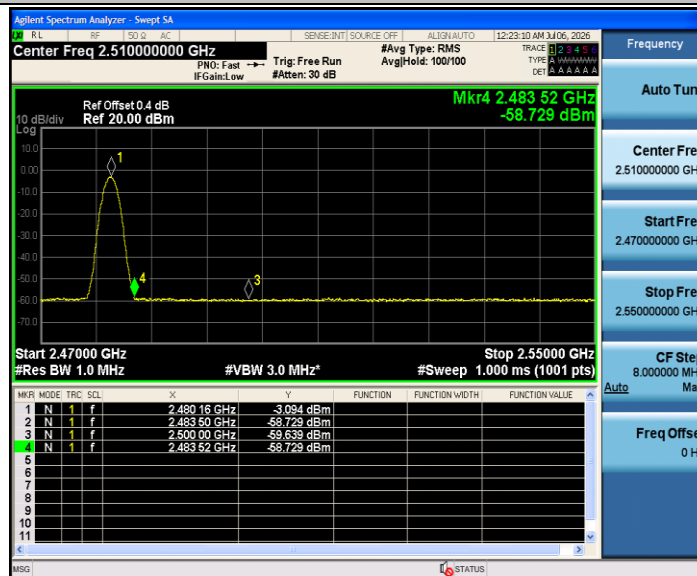
BLE_2M_Ant1_Low_2402_AV



BLE_2M_Ant1_Low_2402_Peak



BLE_2M_Ant1_High_2480_AV



BLE_2M_Ant1_High_2480_Peak

