

FCC Appendix RF Test Data for BLE

FCC ID : 2BKOI-C101

Company : Hangzhou Guowen Technology Co., Ltd.

EUT : OBOOK e-badge

Model Number : C101

Report No. : CTA26031300201

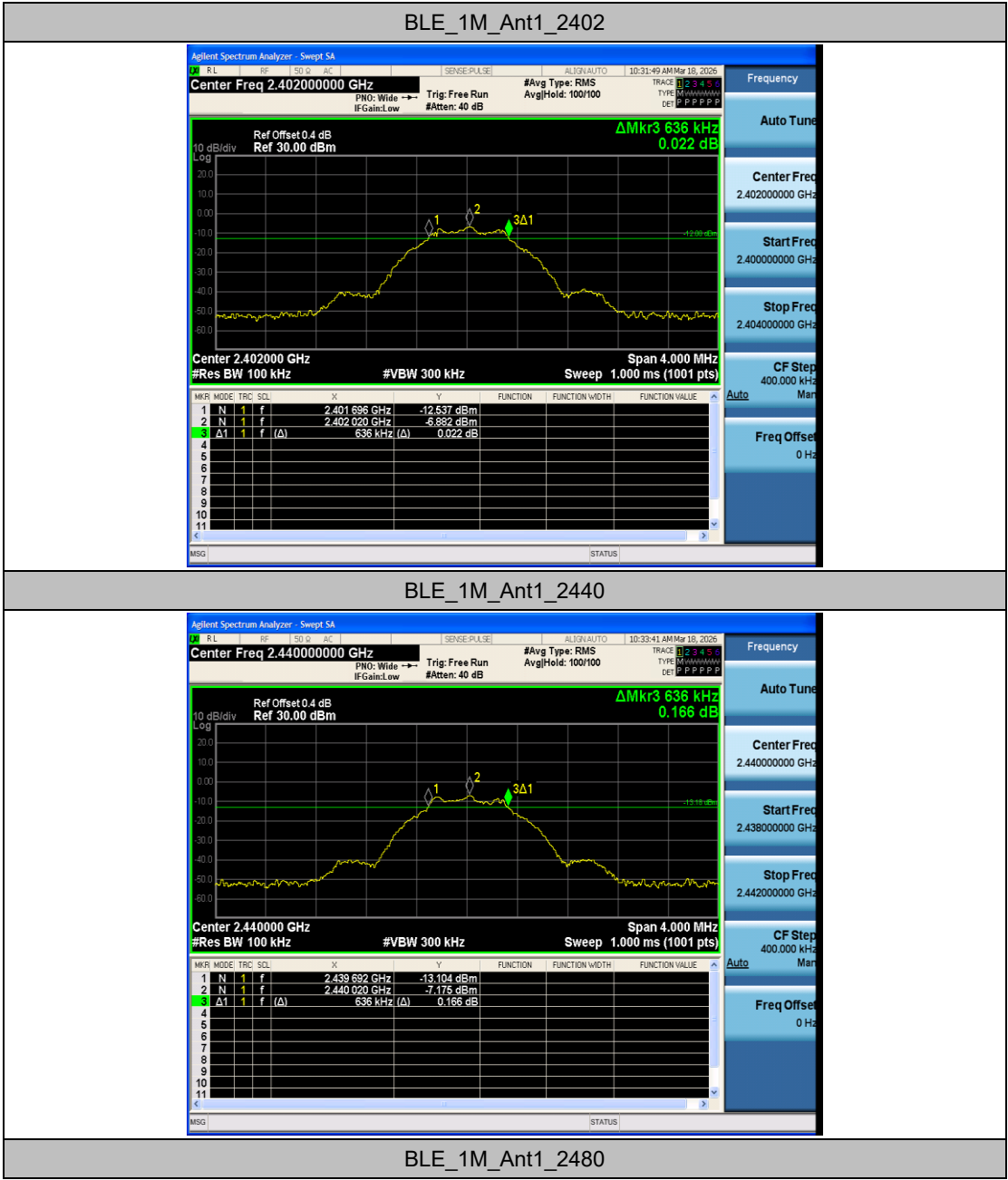
Reviewed By : Eric Wang

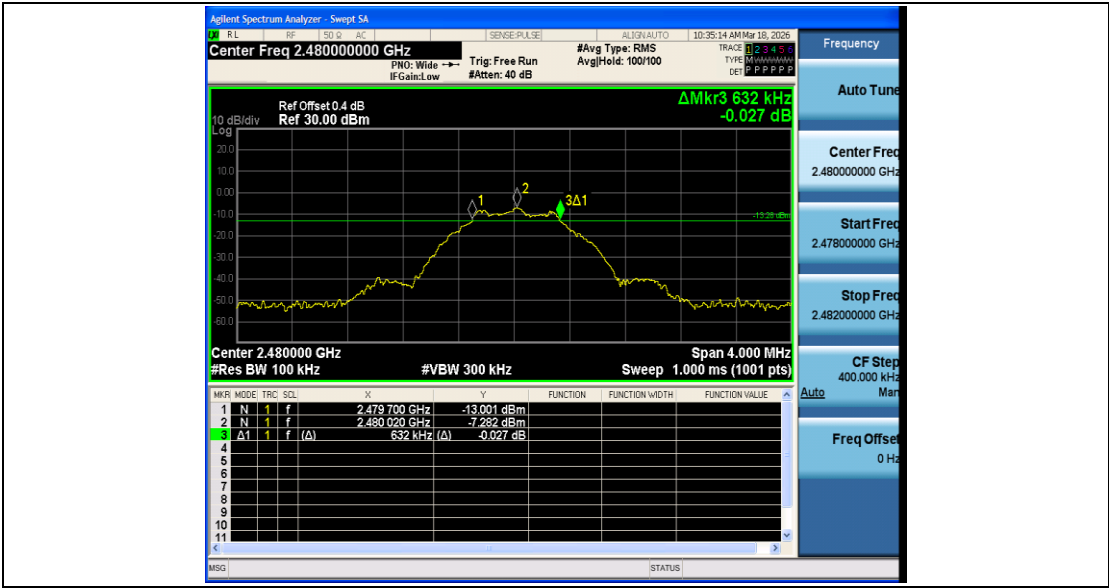
Appendix A: DTS Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.636	2401.696	2402.332	0.5	PASS
		2440	0.636	2439.692	2440.328	0.5	PASS
		2480	0.632	2479.700	2480.332	0.5	PASS

Test Graphs



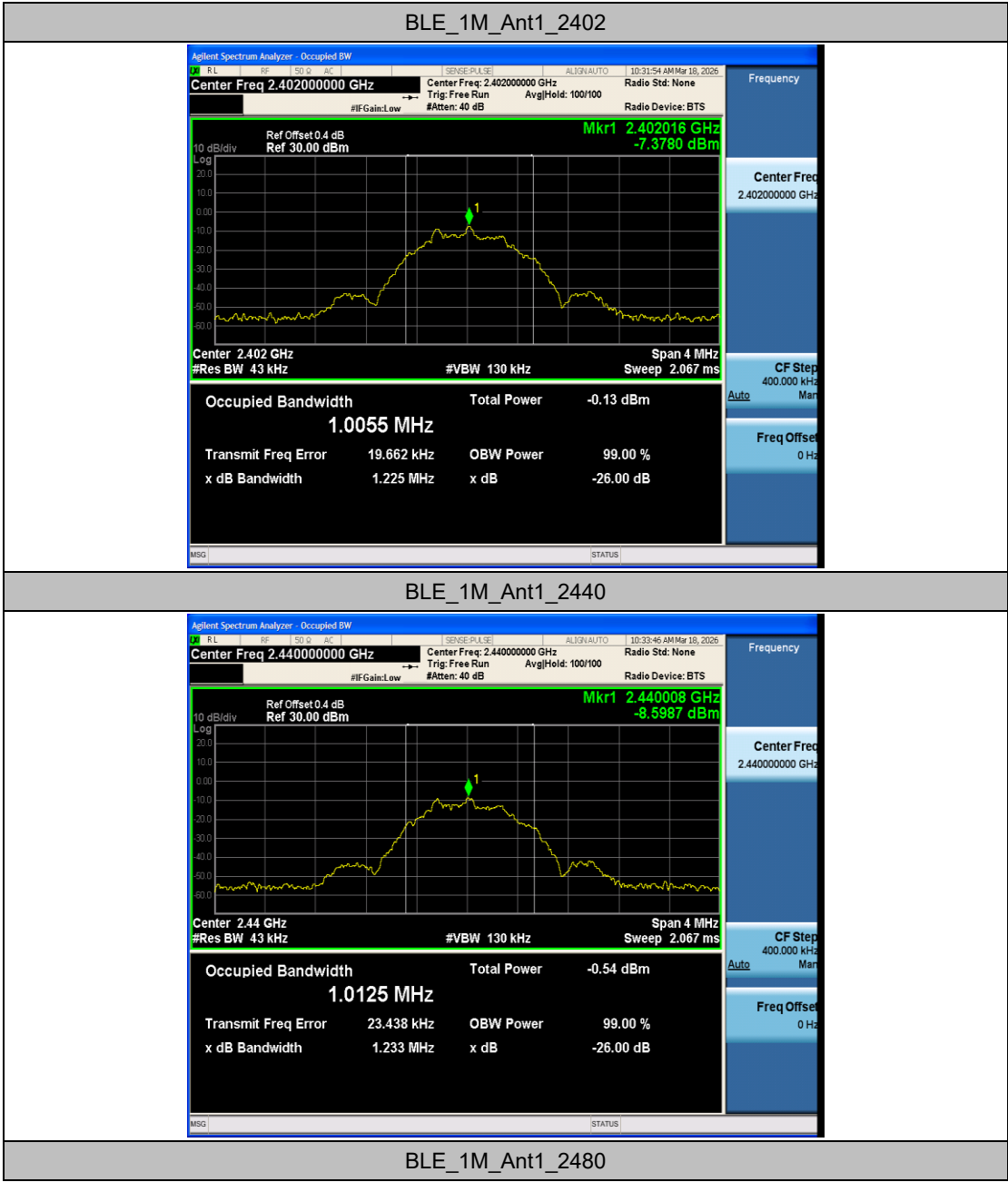


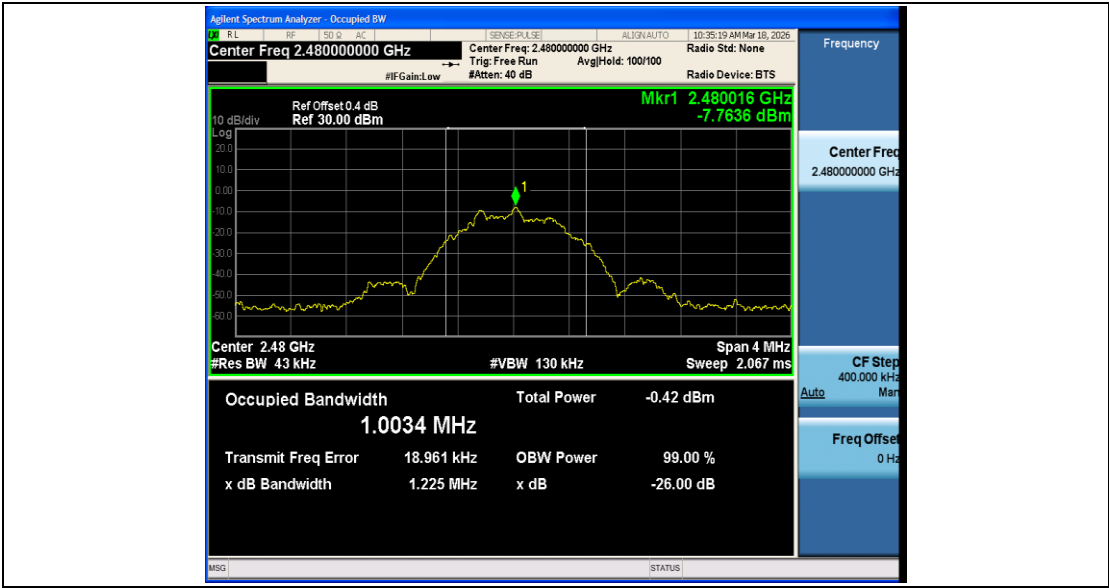
Appendix B: Occupied Channel Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0055	2401.5169	2402.5224	---	---
		2440	1.0125	2439.5172	2440.5297	---	---
		2480	1.0034	2479.5173	2480.5207	---	---

Test Graphs





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	-6.66	≤30	PASS
		2440	-6.94	≤30	PASS
		2480	-7.08	≤30	PASS

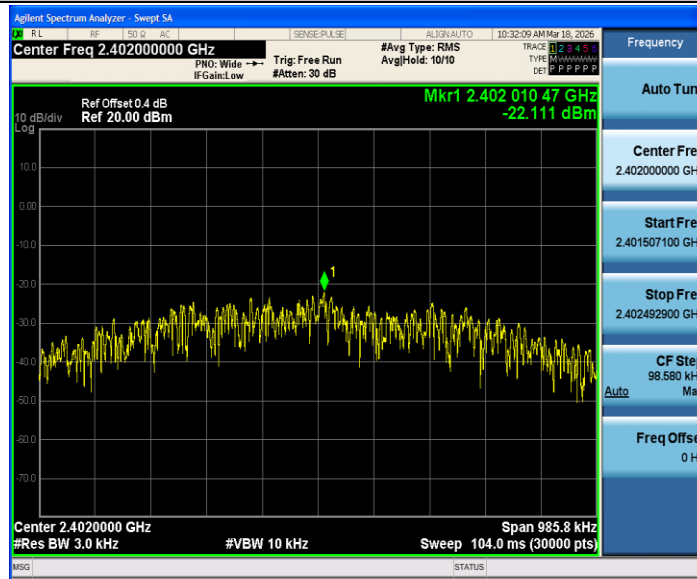
Appendix D: Maximum power spectral density

Test Result

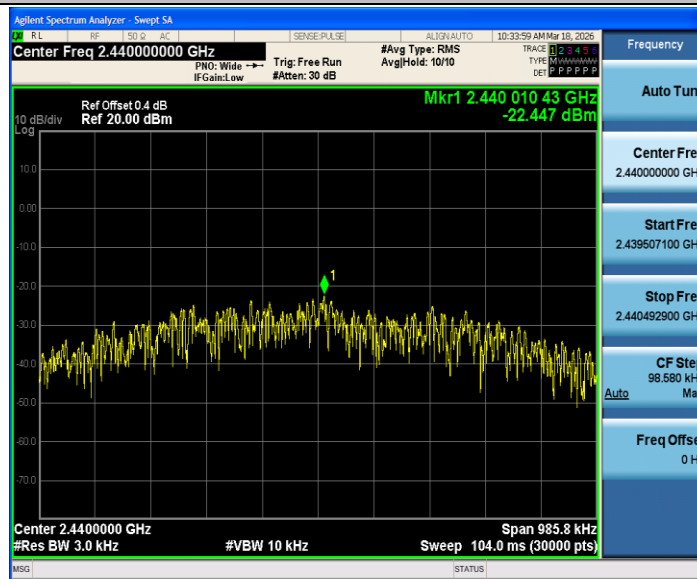
TestMode	Antenna	Freq(MHz)	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-22.11	≤8.00	PASS
		2440	-22.45	≤8.00	PASS
		2480	-22.41	≤8.00	PASS

Test Graphs

BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



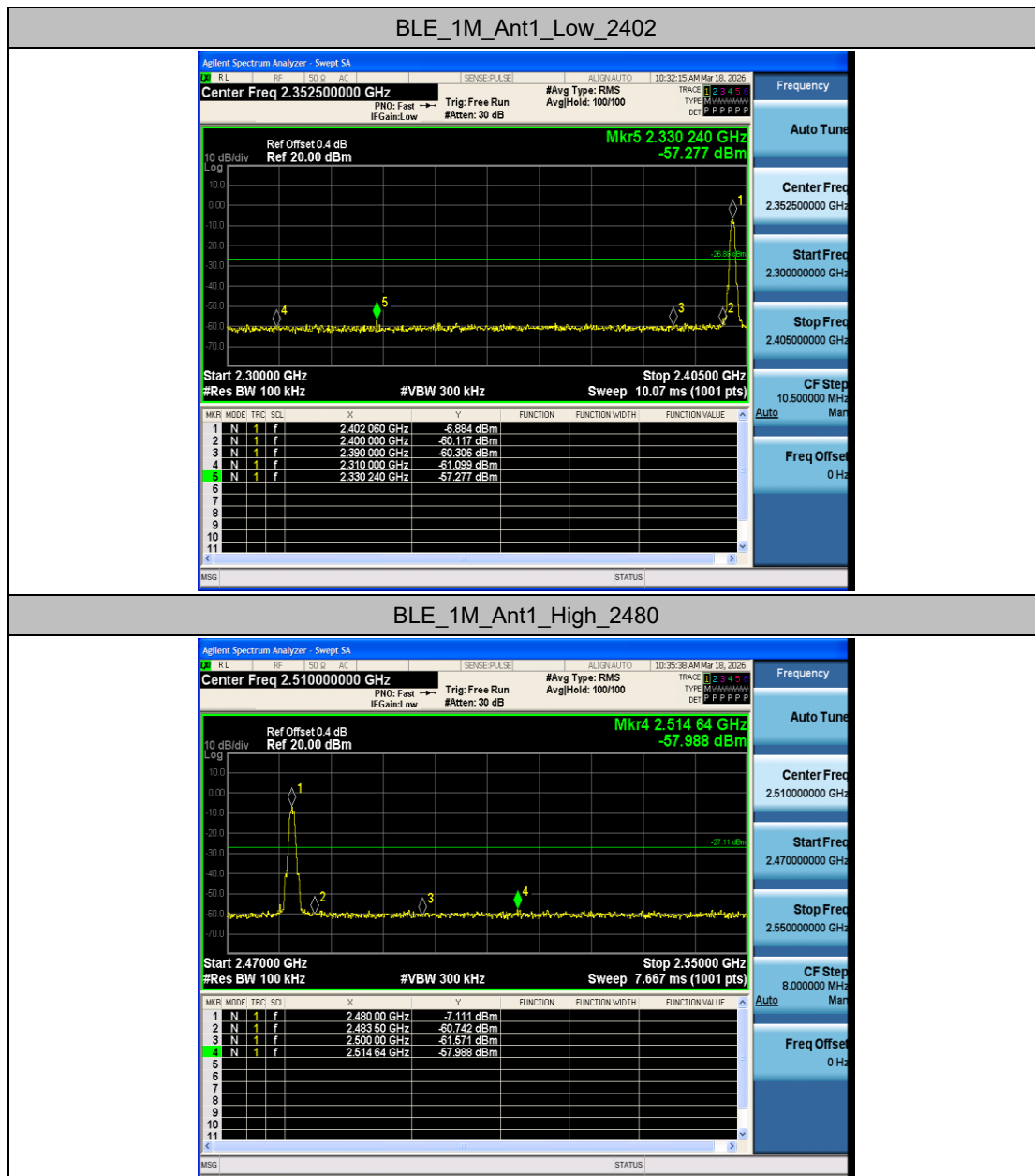
BLE_1M_Ant1_2480

Appendix E: Band edge measurements

Test Result

TestMode	Antenna	ChName	Freq(MHz)	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	-6.88	-57.28	≤-26.88	PASS
		High	2480	-7.11	-57.99	≤-27.11	PASS

Test Graphs

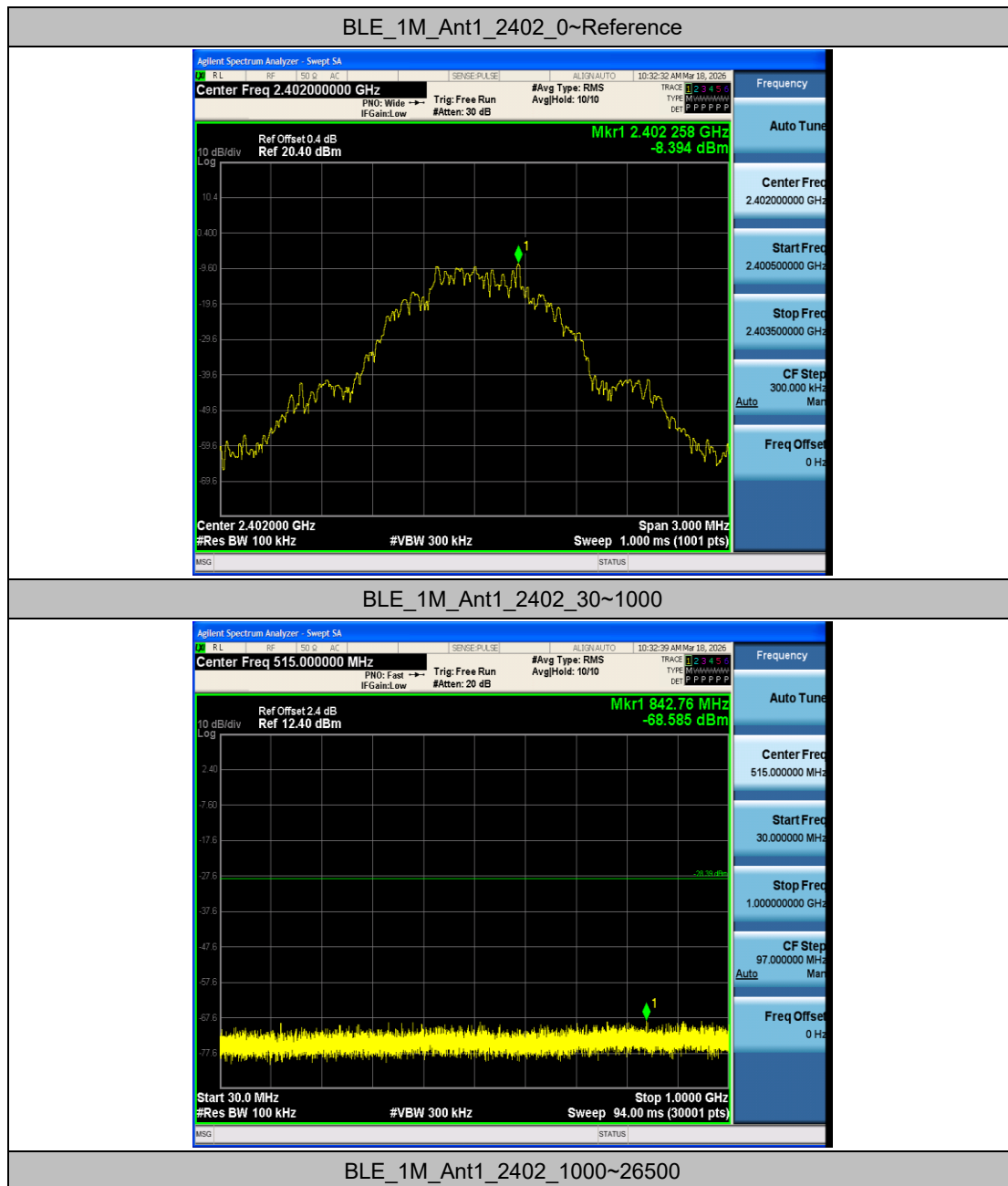


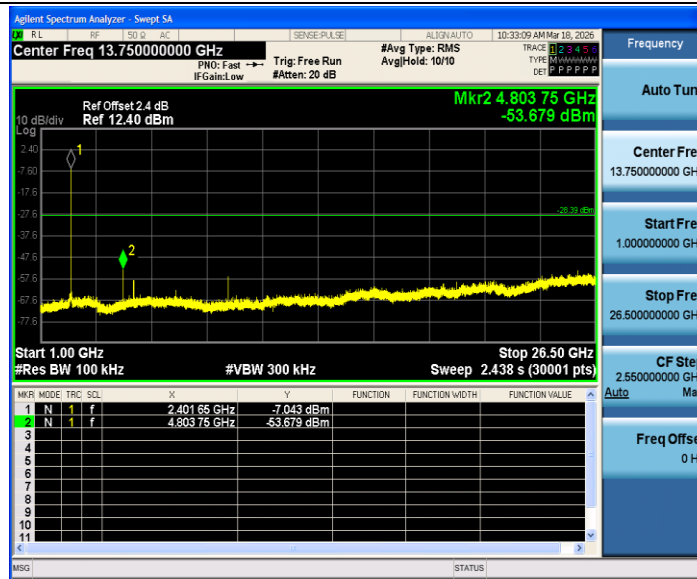
Appendix F: Conducted Spurious Emission

Test Result

TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	-8.39	-8.39	---	PASS
			30~1000	-8.39	-68.59	≤-28.39	PASS
			1000~26500	-8.39	-53.68	≤-28.39	PASS
		2440	Reference	-8.82	-8.82	---	PASS
			30~1000	-8.82	-67.72	≤-28.82	PASS
			1000~26500	-8.82	-53.66	≤-28.82	PASS
		2480	Reference	-7.89	-7.89	---	PASS
			30~1000	-7.89	-67.42	≤-27.89	PASS
			1000~26500	-7.89	-52.91	≤-27.89	PASS

Test Graphs

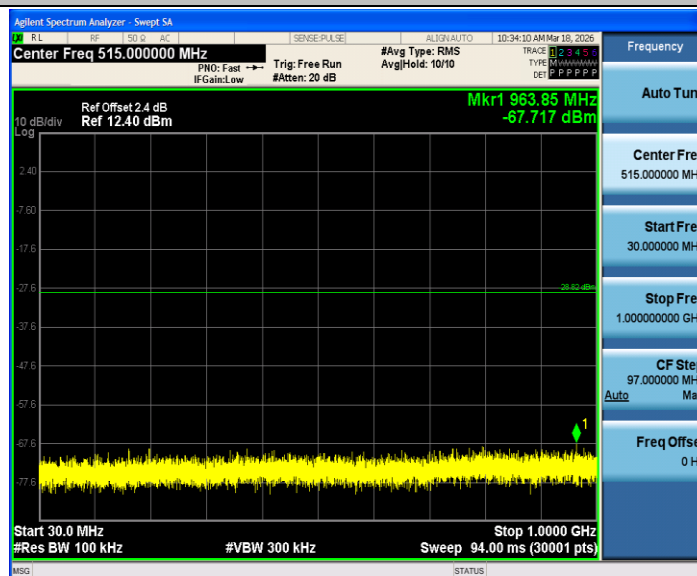




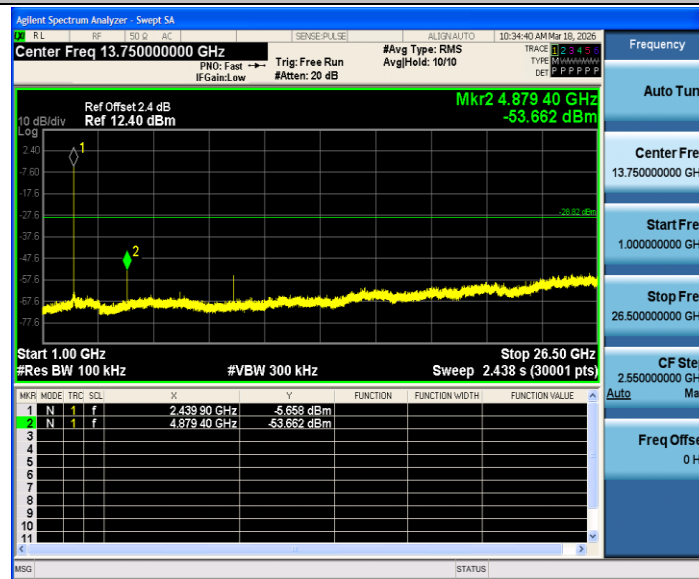
BLE_1M_Ant1_2440_0~Reference



BLE_1M_Ant1_2440_30~1000



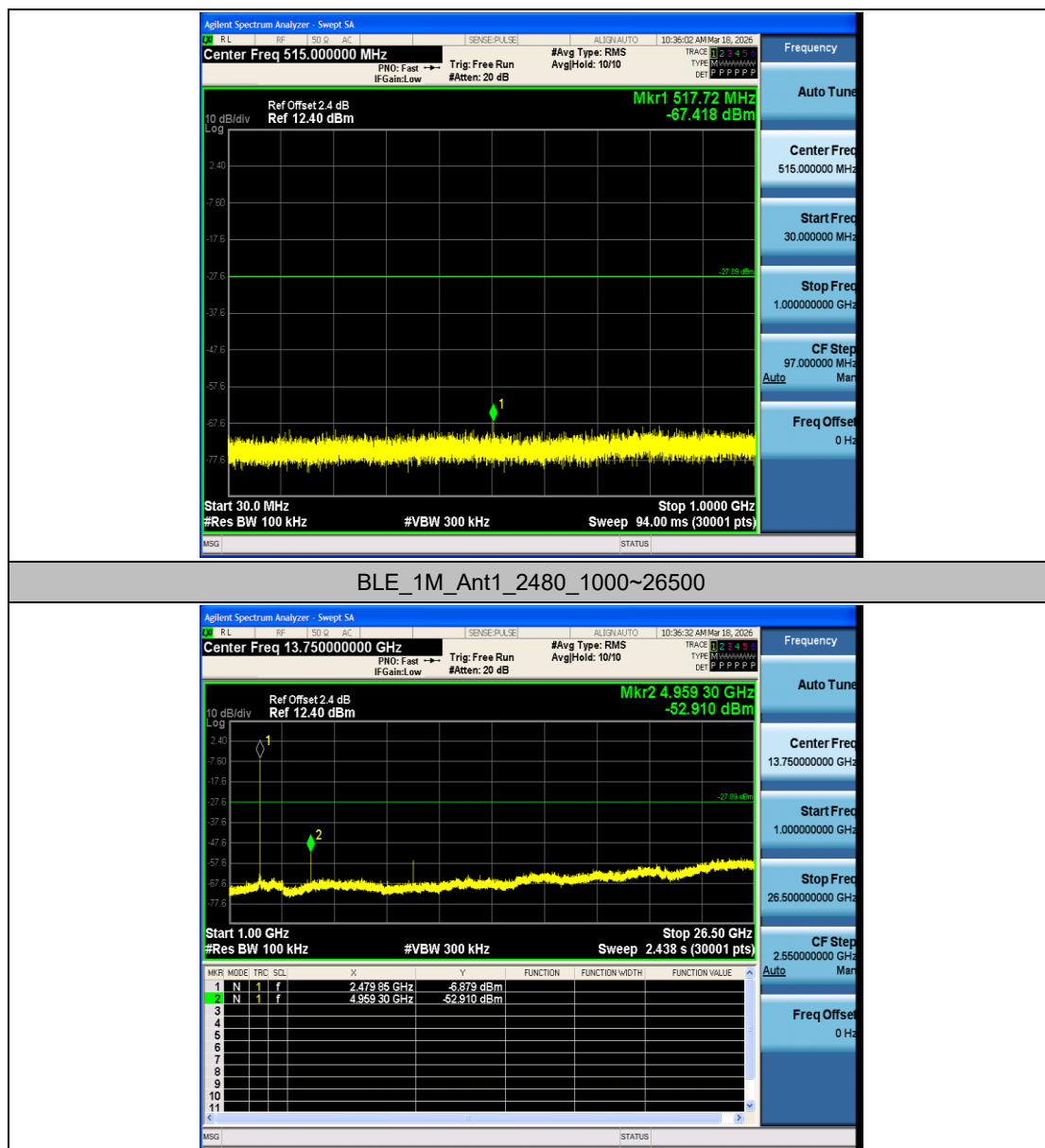
BLE_1M_Ant1_2440_1000~26500



BLE_1M_Ant1_2480_0~Reference



BLE_1M_Ant1_2480_30~1000

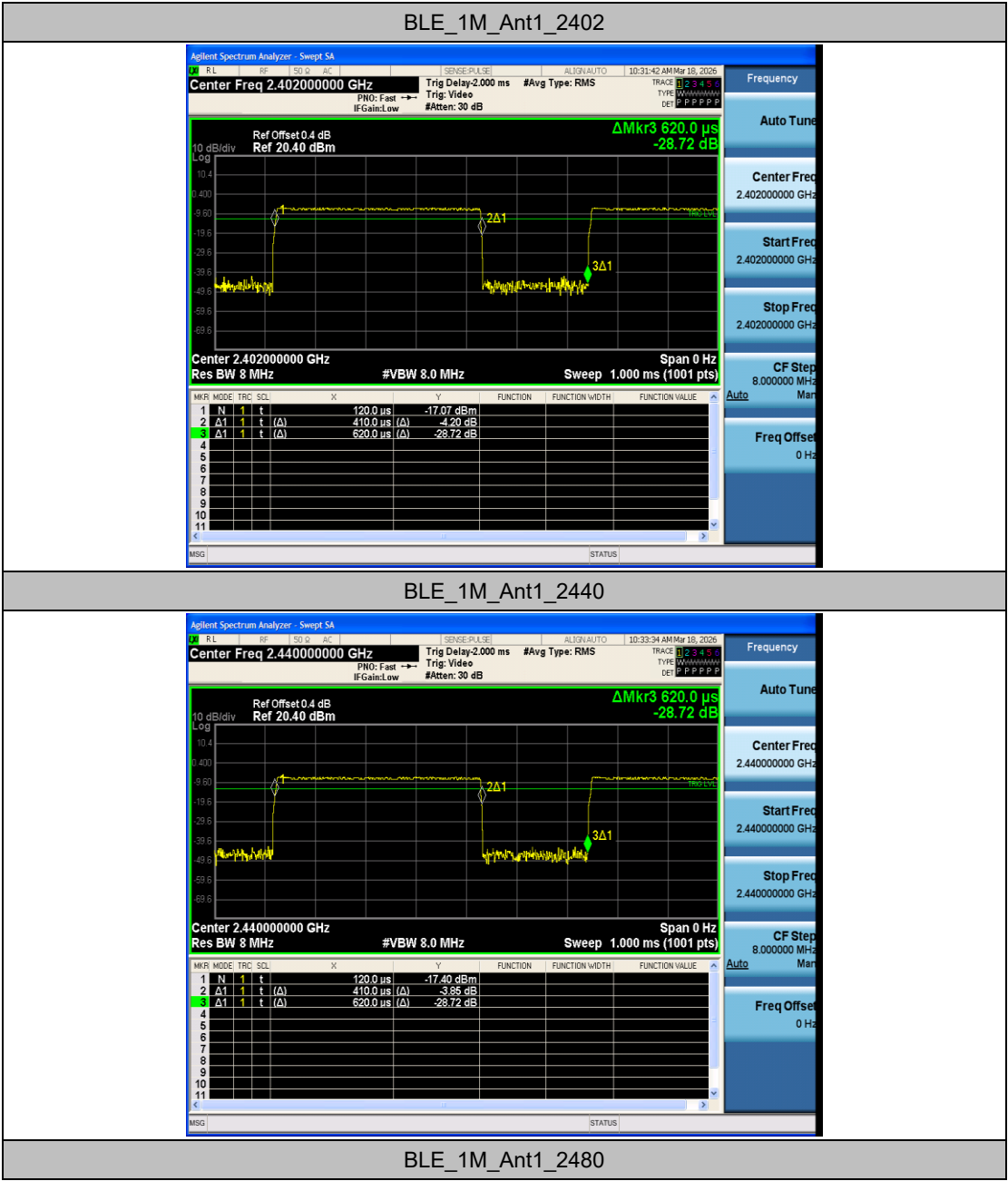


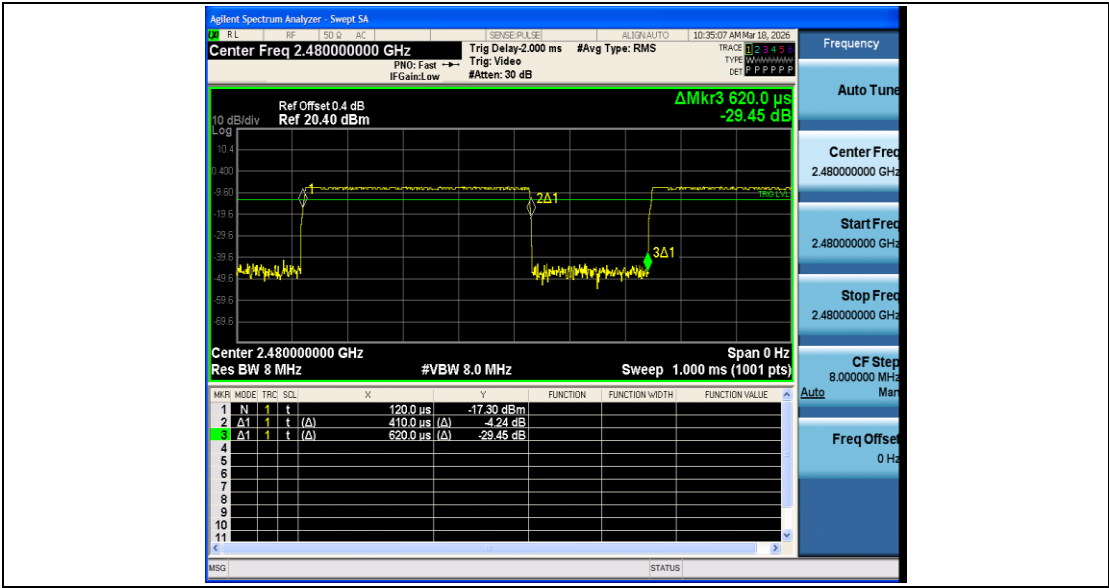
Appendix G: Duty Cycle

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	---	---

Test Graphs





Appendix H: Emissions in Restricted Bands

Test Result

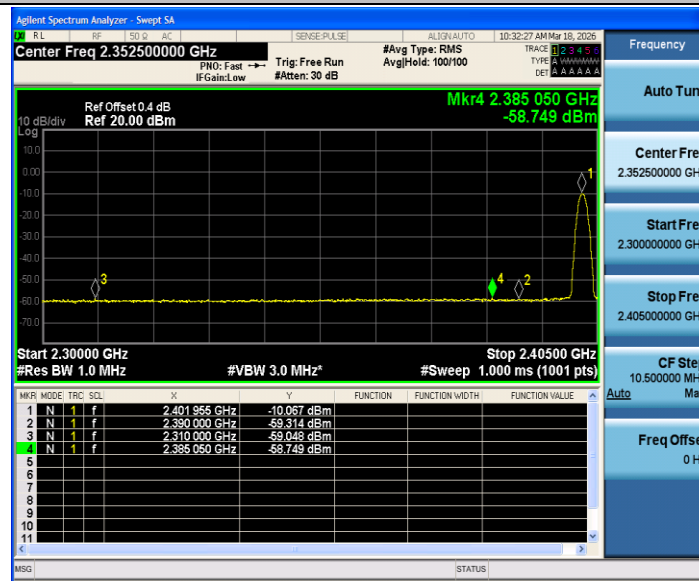
TestMode	Antenna	Channel Name	Freq(MHz)	Detector	Freq [MHz]	Result [dBm]	Gain [dB]	DC Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
BLE_1M	Ant1	Low	2402	AV	2310.000	-59.05	2.00	1.80	39.95	≤54	PASS
				AV	2385.050	-58.75	2.00	1.80	40.25	≤54	PASS
				AV	2390.000	-59.31	2.00	1.80	39.69	≤54	PASS
				Peak	2310.000	-51.92	2.00	0.00	45.28	≤74	PASS
				Peak	2352.185	-48.45	2.00	0.00	48.75	≤74	PASS
				Peak	2390.000	-51.66	2.00	0.00	45.54	≤74	PASS
		High	2480	AV	2483.500	-58.48	2.00	1.80	40.52	≤54	PASS
				AV	2483.840	-58.17	2.00	1.80	40.83	≤54	PASS
				AV	2500.000	-59.15	2.00	1.80	39.85	≤54	PASS
				Peak	2483.500	-50.66	2.00	0.00	46.54	≤74	PASS
				Peak	2497.120	-48.13	2.00	0.00	49.07	≤74	PASS
				Peak	2500.000	-51.02	2.00	0.00	46.18	≤74	PASS

Note:

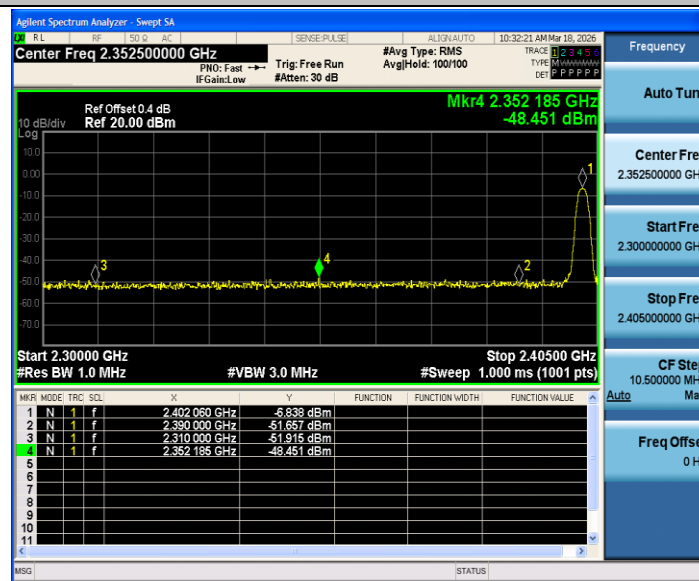
- The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

Test Graphs

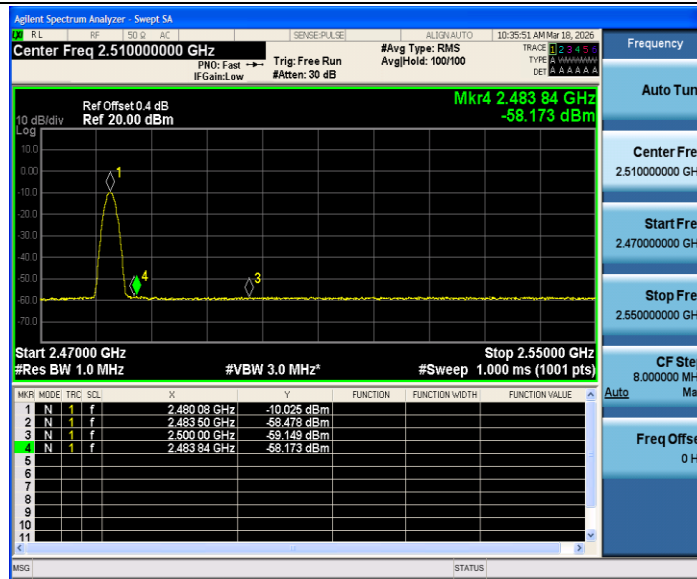
BLE_1M_Ant1_Low_2402_AV



BLE_1M_Ant1_Low_2402_Peak



BLE_1M_Ant1_High_2480_AV



BLE_1M_Ant1_High_2480_Peak

