

FCC Appendix RF Test Data for BLE

FCC ID : 2BQEA-EC-680

Company : SHENZHEN YOWEXA MEASUREMENT TECHNOLOGY
CO.,LTD

EUT : Bluetooth Coating Thickness Gauge

Model Number : EC-680

Report No. : CTA26073000301

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	2401.692	2402.332	0.5	PASS
		2440	0.648	2439.688	2440.336	0.5	PASS
		2480	0.648	2479.692	2480.340	0.5	PASS

Test Graphs

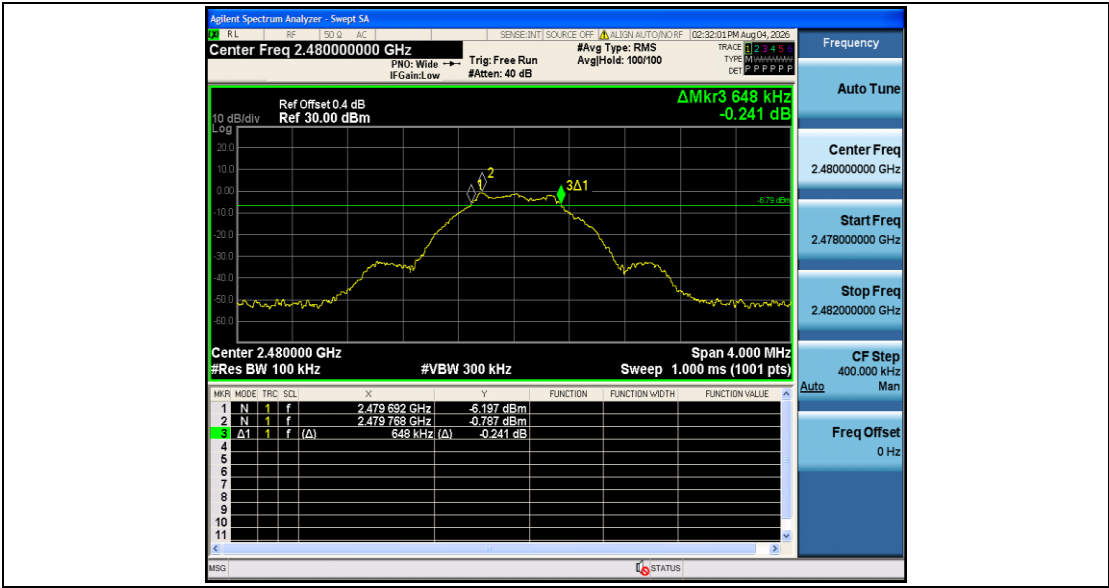
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480

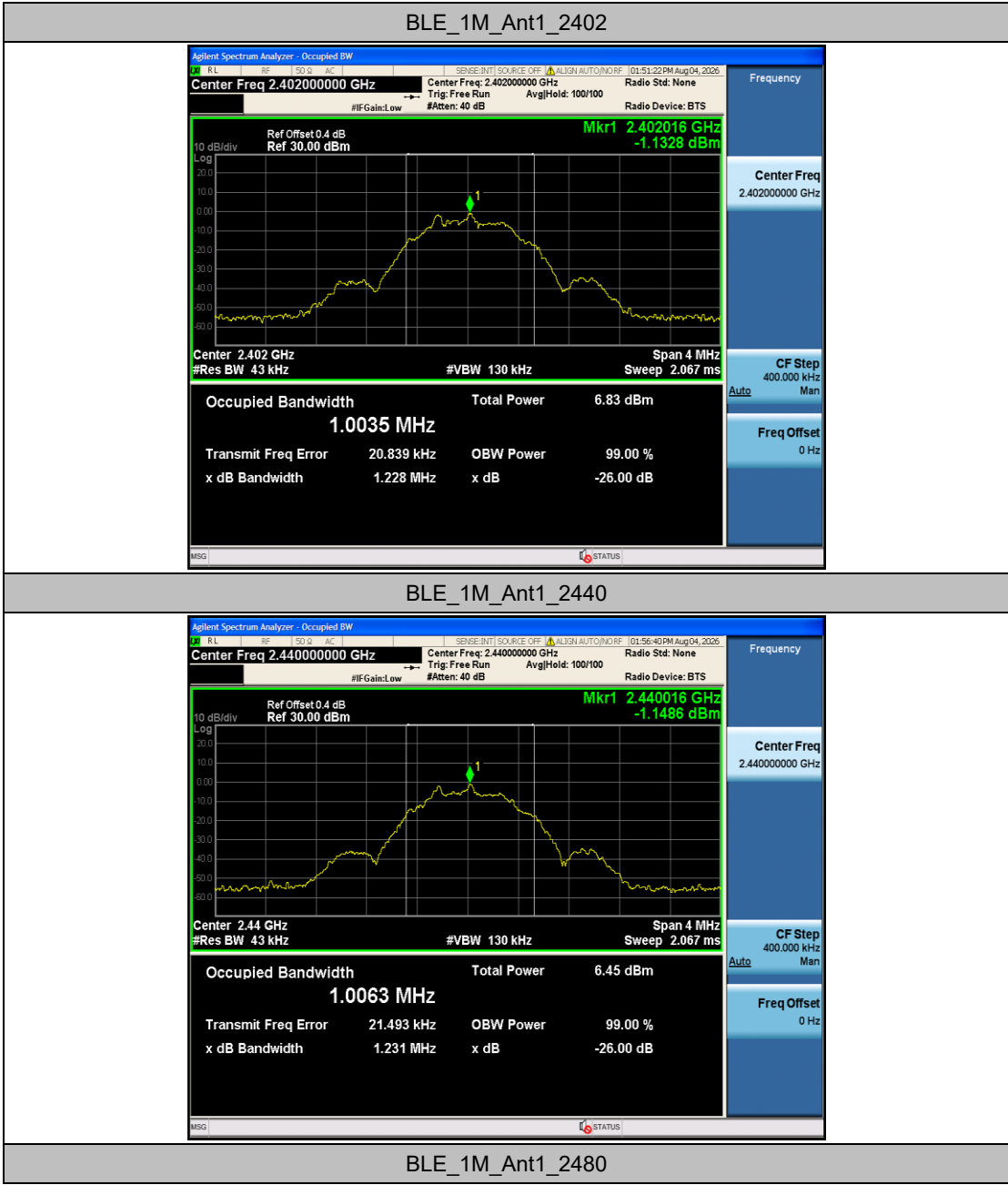


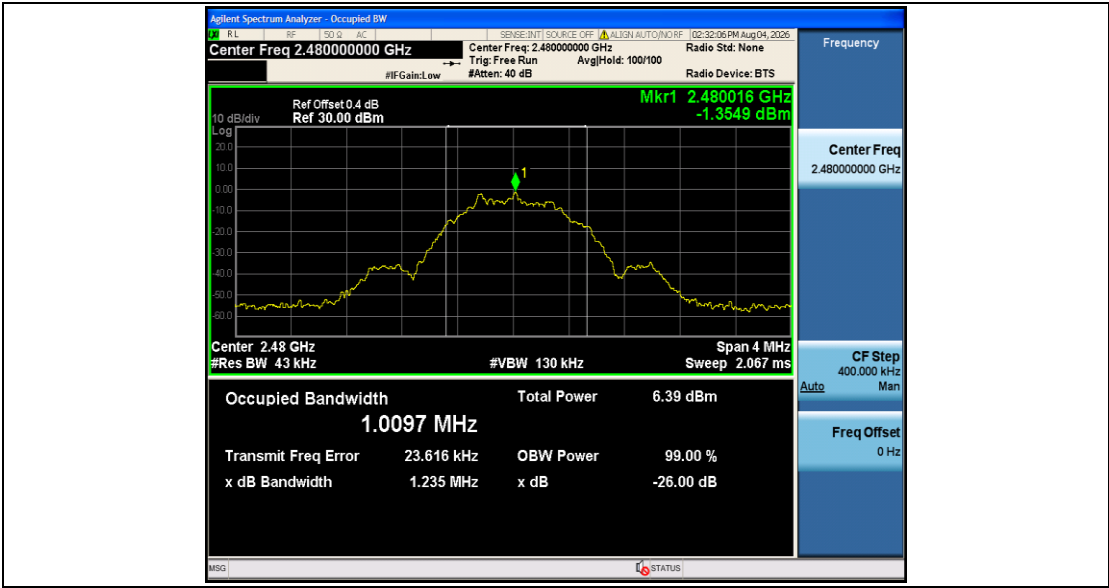
Appendix B: Occupied Channel Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0035	2401.5191	2402.5226	---	---
		2440	1.0063	2439.5183	2440.5246	---	---
		2480	1.0097	2479.5188	2480.5285	---	---

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	-0.03	≤30	PASS
		2440	-0.10	≤30	PASS
		2480	-0.30	≤30	PASS

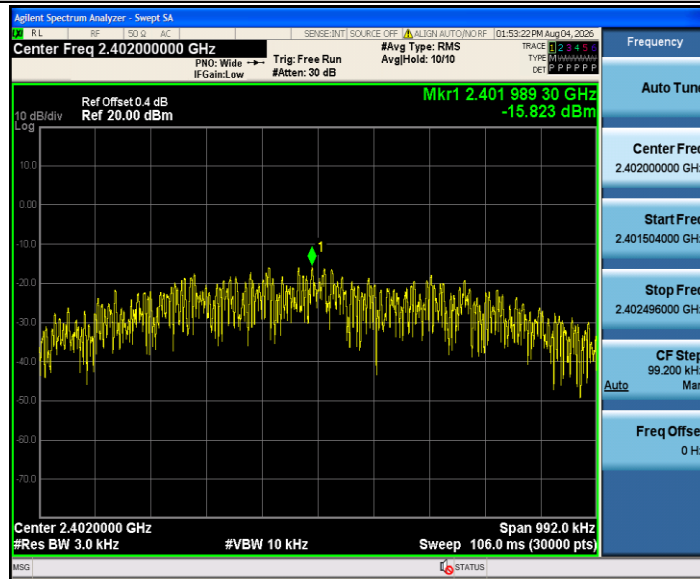
Appendix D: Maximum power spectral density

Test Result

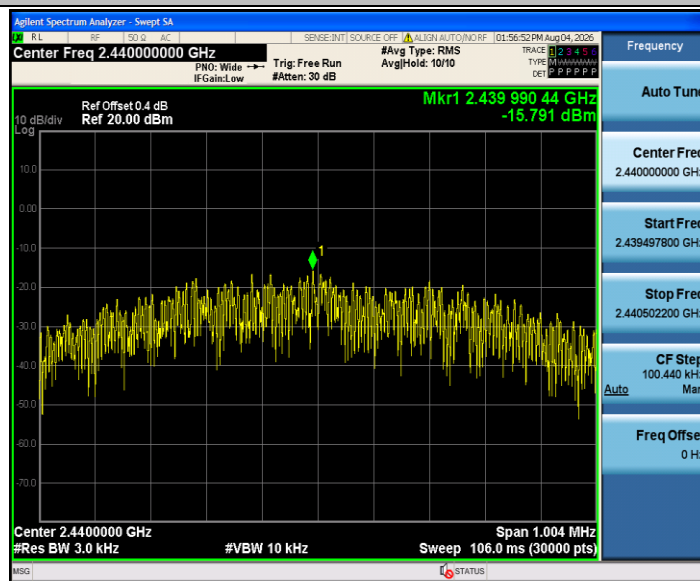
TestMode	Antenna	Freq(MHz)	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-15.82	≤8.00	PASS
		2440	-15.79	≤8.00	PASS
		2480	-15.91	≤8.00	PASS

Test Graphs

BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



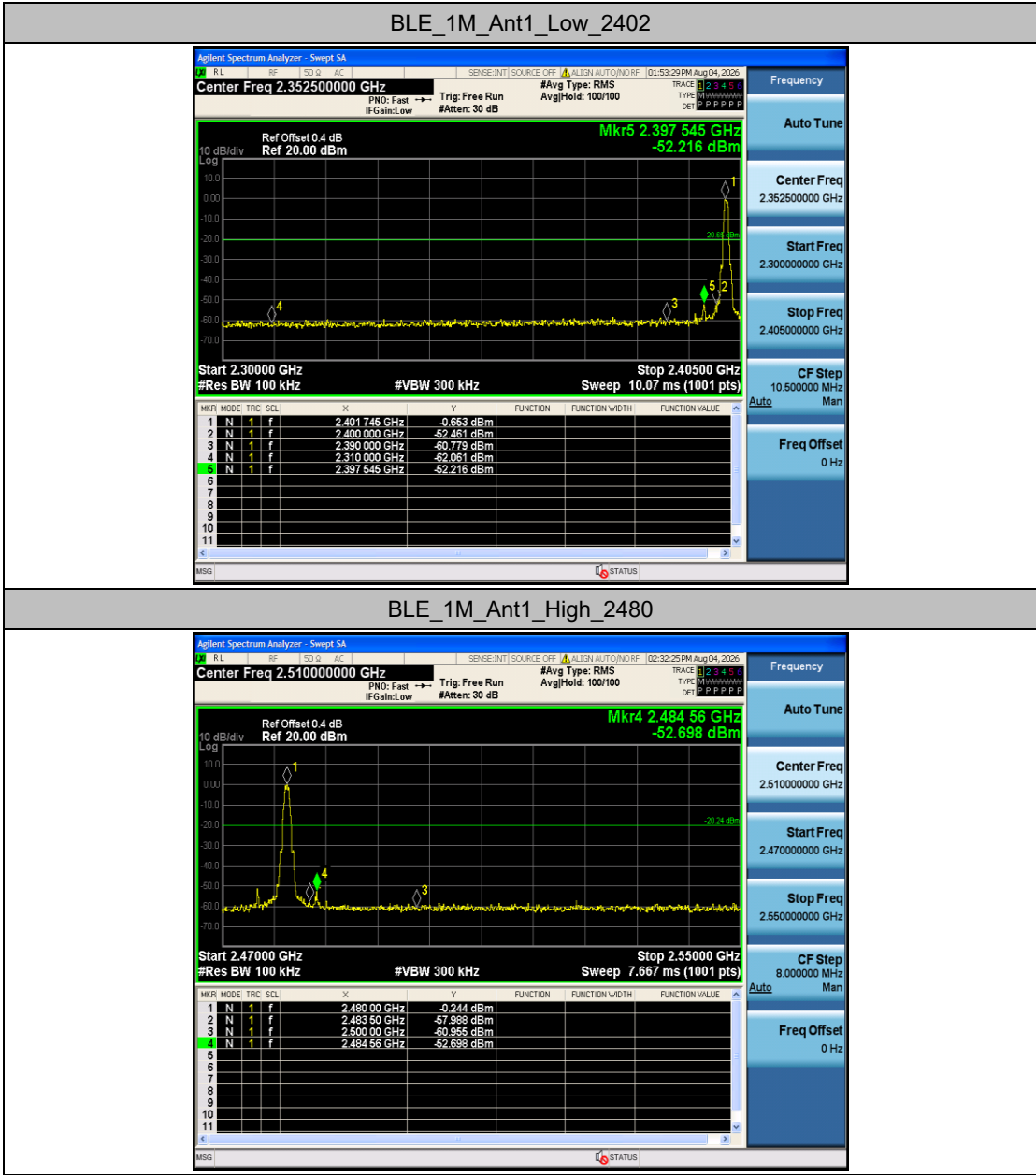
BLE_1M_Ant1_2480

Appendix E: Band edge measurements

Test Result

TestMode	Antenna	ChName	Freq(MHz)	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	-0.65	-52.22	≤ -20.65	PASS
		High	2480	-0.24	-52.7	≤ -20.24	PASS

Test Graphs

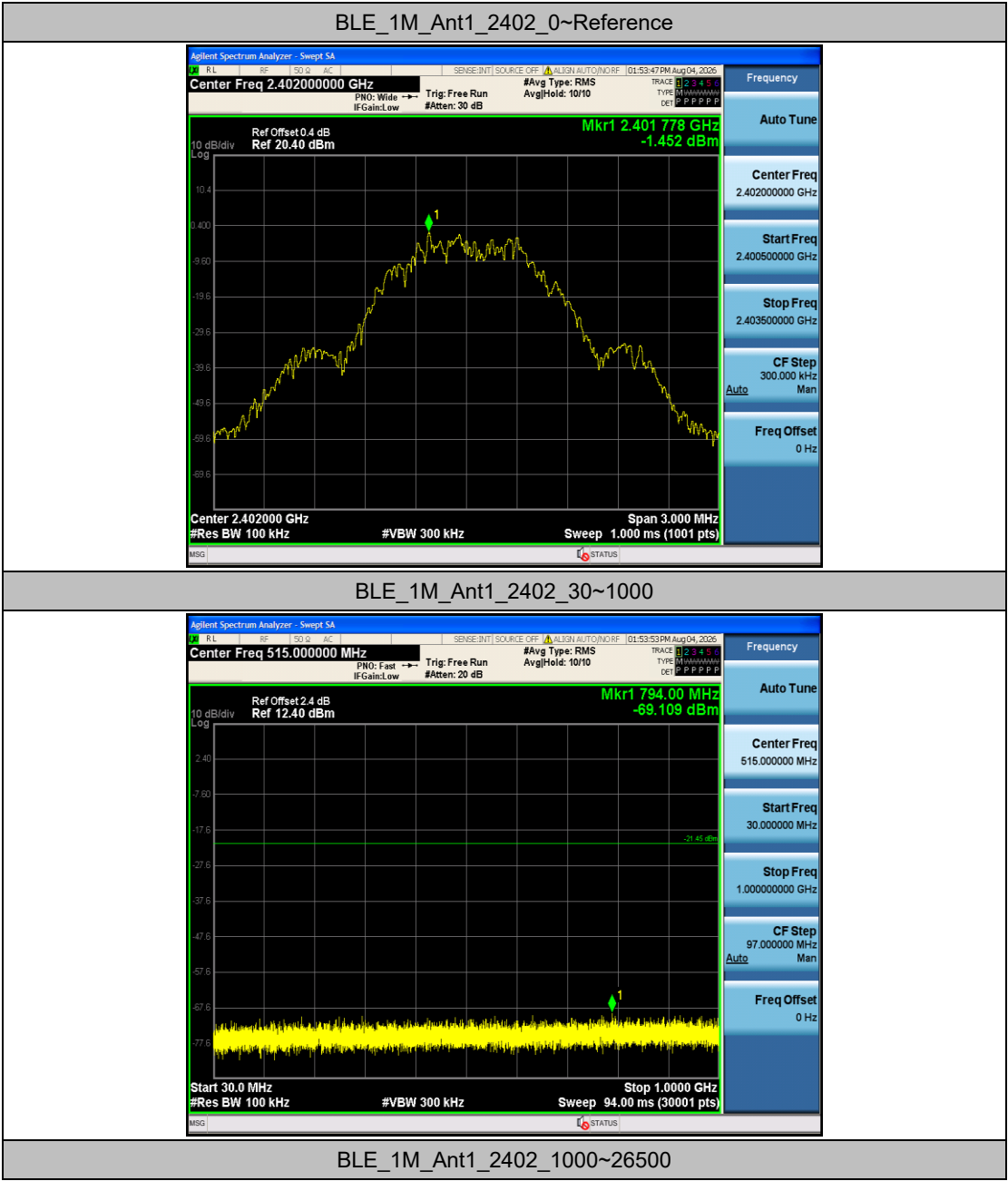


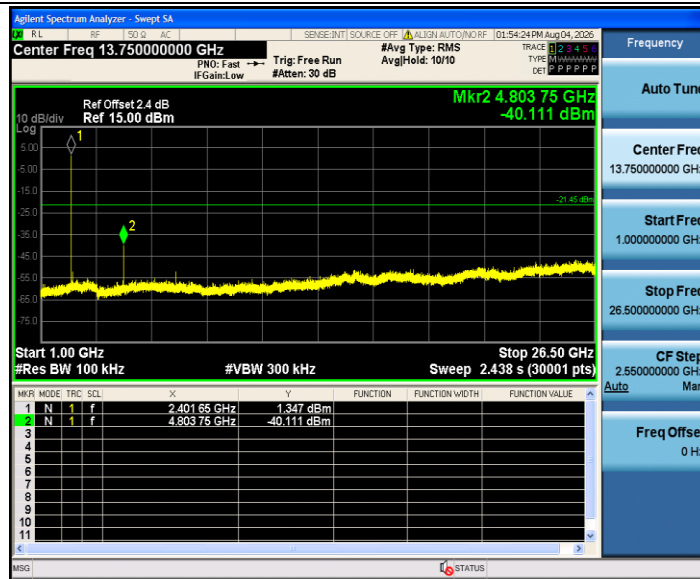
Appendix F: Conducted Spurious Emission

Test Result

TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	-1.45	-1.45	---	PASS
			30~1000	-1.45	-69.11	≤-21.45	PASS
			1000~26500	-1.45	-40.11	≤-21.45	PASS
		2440	Reference	-1.42	-1.42	---	PASS
			30~1000	-1.42	-69.44	≤-21.42	PASS
			1000~26500	-1.42	-40.56	≤-21.42	PASS
		2480	Reference	-1.89	-1.89	---	PASS
			30~1000	-1.89	-68.68	≤-21.89	PASS
			1000~26500	-1.89	-40.9	≤-21.89	PASS

Test Graphs

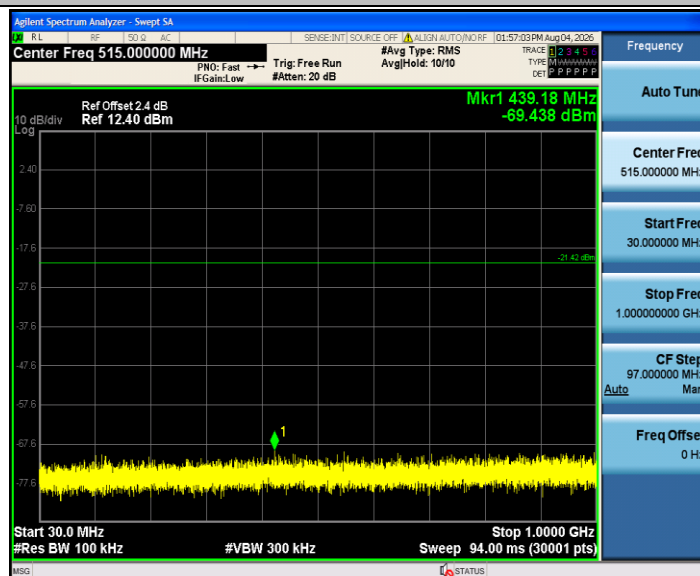




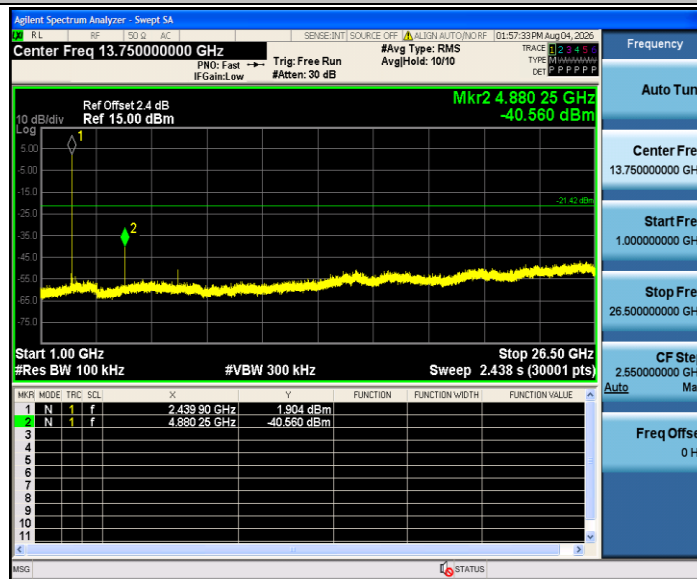
BLE_1M_Ant1_2440_0~Reference



BLE_1M_Ant1_2440_30~1000



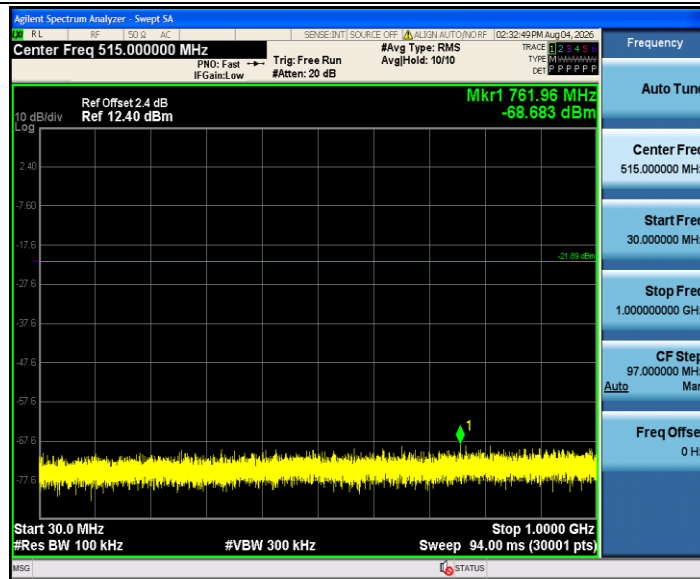
BLE_1M_Ant1_2440_1000~26500



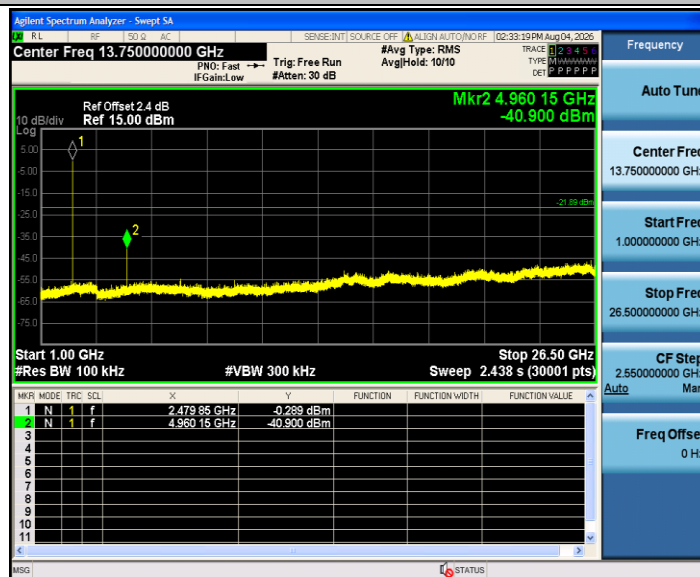
BLE_1M_Ant1_2480_0~Reference



BLE_1M_Ant1_2480_30~1000



BLE_1M_Ant1_2480_1000~26500

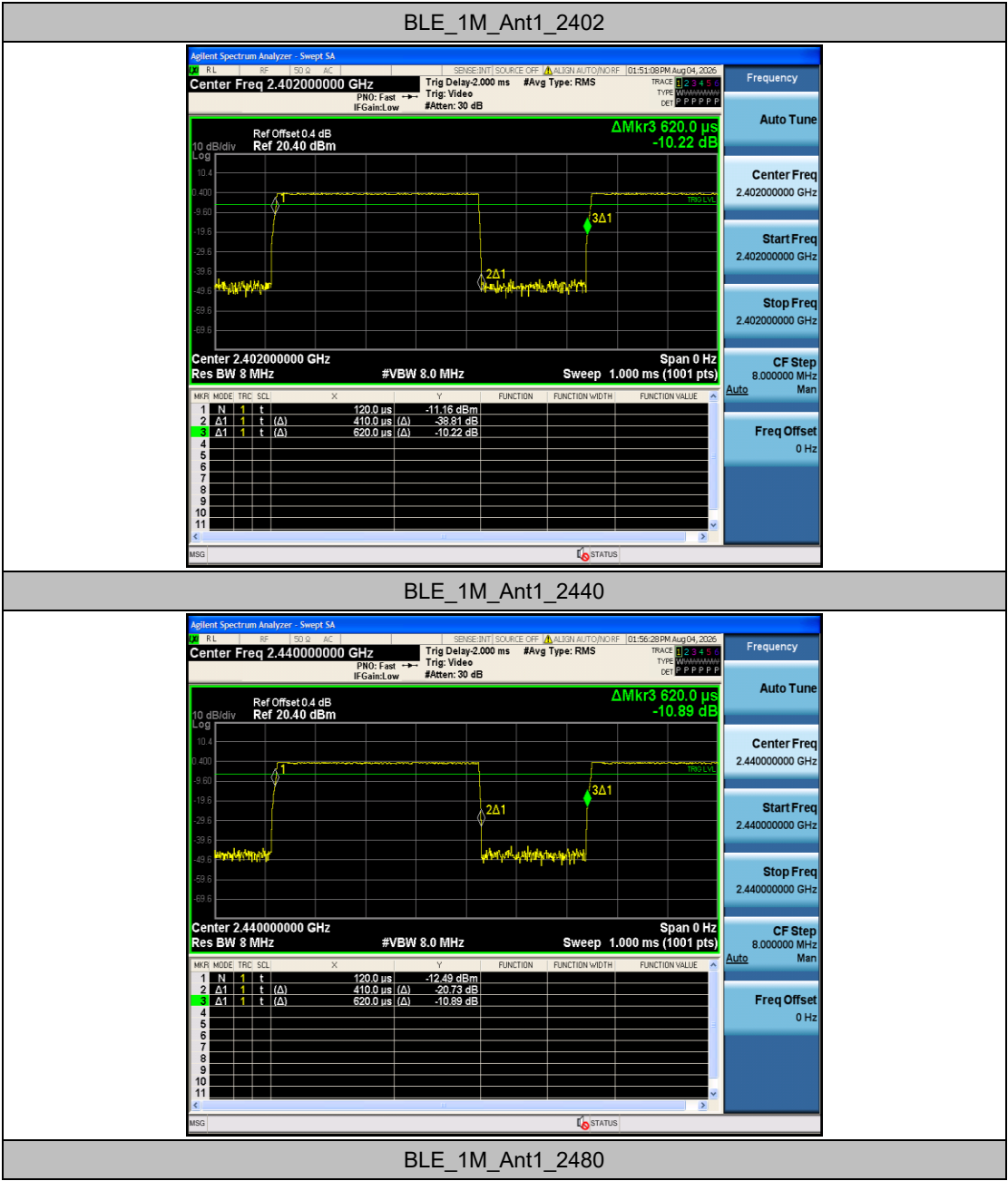


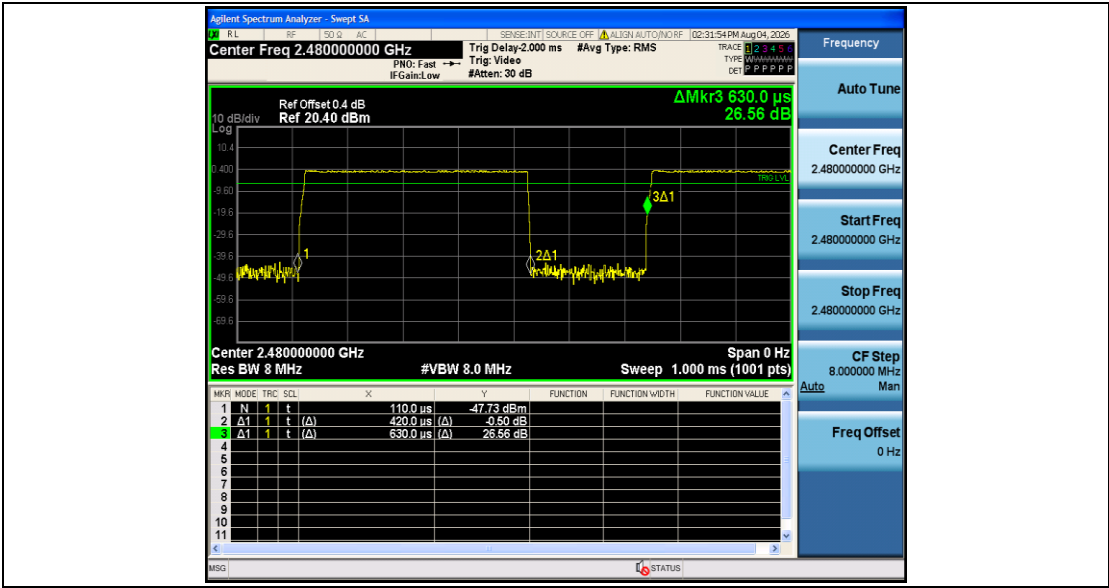
Appendix G: Duty Cycle

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	0.42	0.63	0.6667	66.67	1.76	---	---

Test Graphs





Appendix H: Emissions in Restricted Bands

Test Result

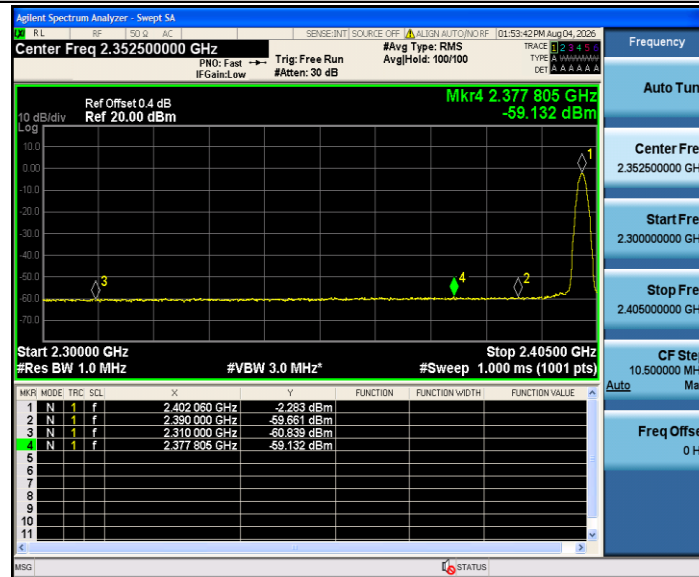
TestMode	Antenna	Channel	Freq(MHz)	Detector	Freq [MHz]	Result [dBm]	Gain [dB]	DC Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
BLE_1M	Ant1	Low	2402	AV	2310.000	-60.84	2.00	1.80	38.16	≤54	PASS
				AV	2377.805	-59.13	2.00	1.80	39.87	≤54	PASS
				AV	2390.000	-59.66	2.00	1.80	39.34	≤54	PASS
				Peak	2310.000	-52.91	2.00	0.00	44.29	≤74	PASS
				Peak	2358.065	-48.78	2.00	0.00	48.42	≤74	PASS
				Peak	2390.000	-52.66	2.00	0.00	44.54	≤74	PASS
		High	2480	AV	2483.500	-57.97	2.00	1.76	40.99	≤54	PASS
				AV	2483.600	-57.59	2.00	1.76	41.37	≤54	PASS
				AV	2500.000	-58.84	2.00	1.76	40.12	≤54	PASS
				Peak	2483.500	-49.66	2.00	0.00	47.54	≤74	PASS
				Peak	2484.400	-44.18	2.00	0.00	53.02	≤74	PASS
				Peak	2500.000	-51.88	2.00	0.00	45.32	≤74	PASS

Note:

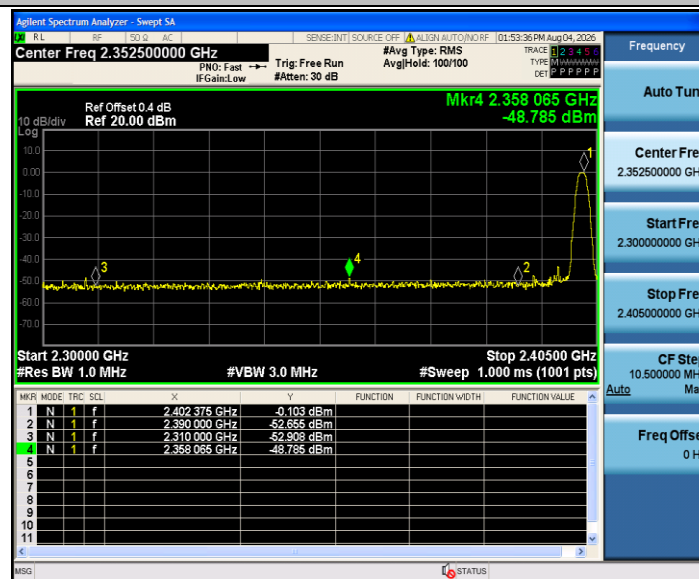
1. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

Test Graphs

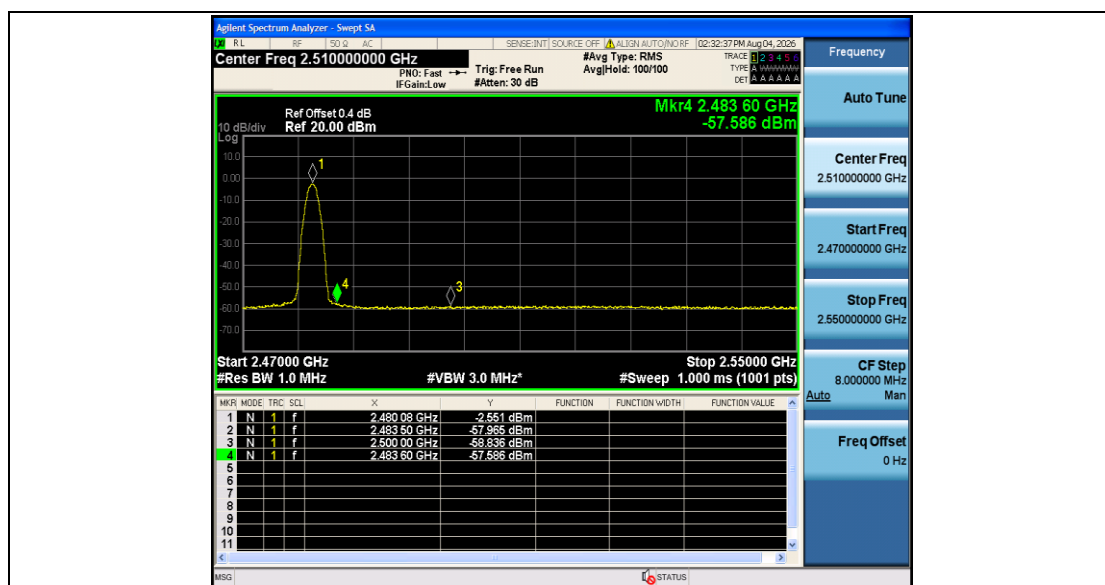
BLE_1M_Ant1_Low_2402_AV



BLE_1M_Ant1_Low_2402_Peak



BLE_1M_Ant1_High_2480_AV



BLE_1M_Ant1_High_2480_Peak

