

FCC Appendix RF Test Data for BLE

FCC ID : 2BFSN-SZ-053

Company : Dongguan Sanzon Smart Home Products Co., Ltd.

EUT : Diffuser

Model Number : SZ-053

Report No. : CTA26031800901

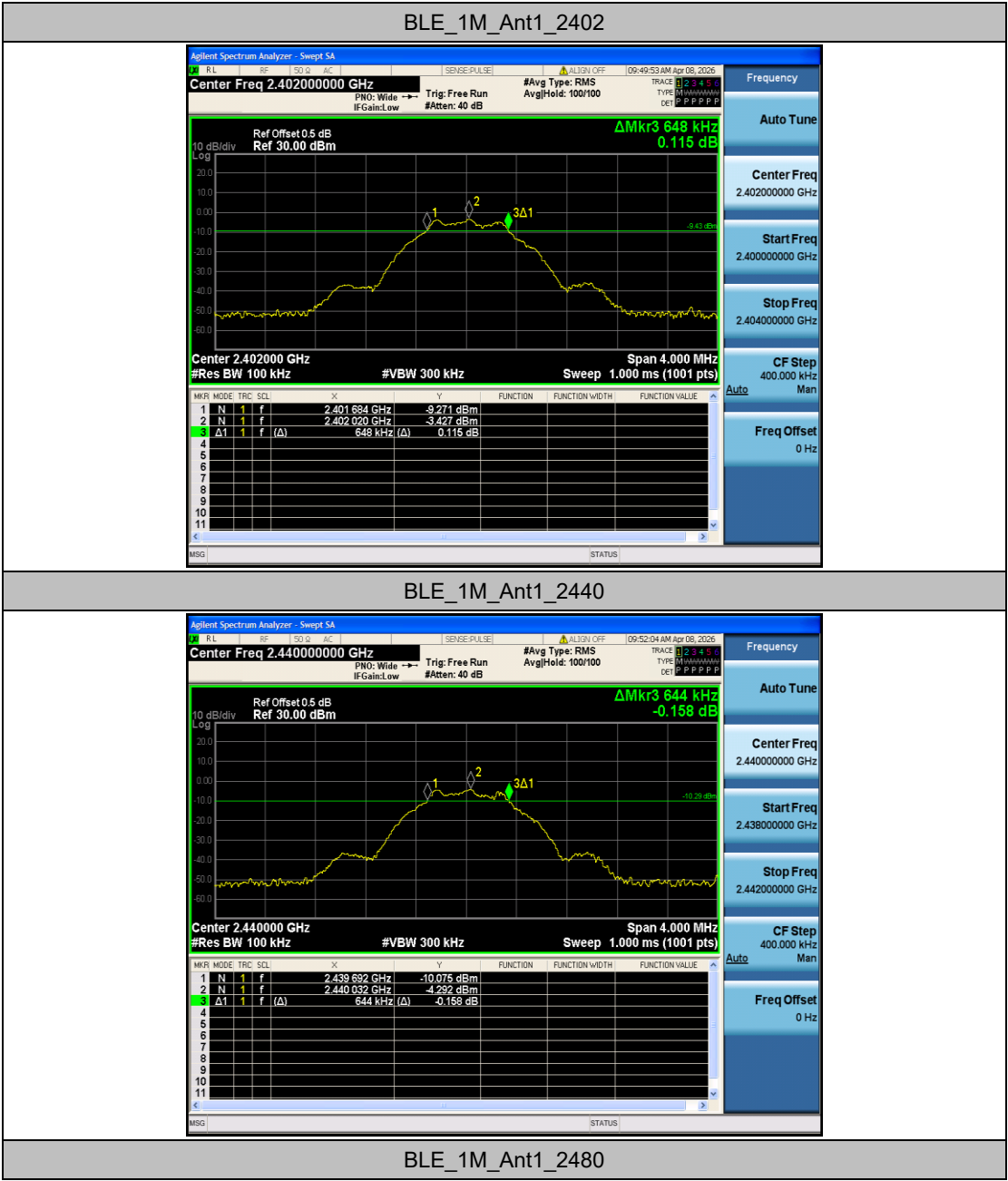
Reviewed By : Eric Wang

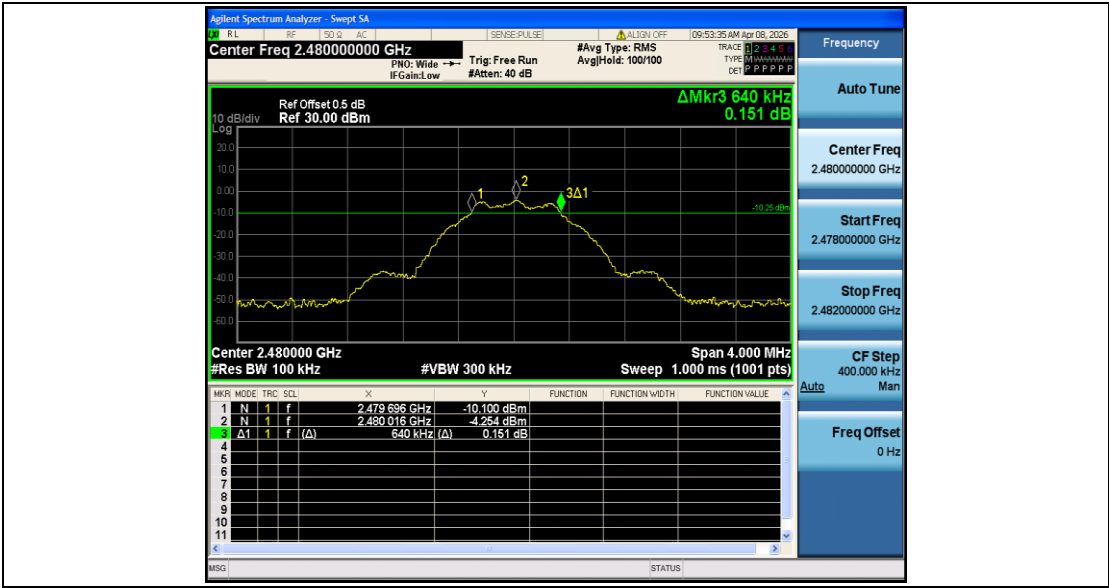
Appendix A: DTS Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.648	2401.684	2402.332	0.5	PASS
		2440	0.644	2439.692	2440.336	0.5	PASS
		2480	0.640	2479.696	2480.336	0.5	PASS

Test Graphs



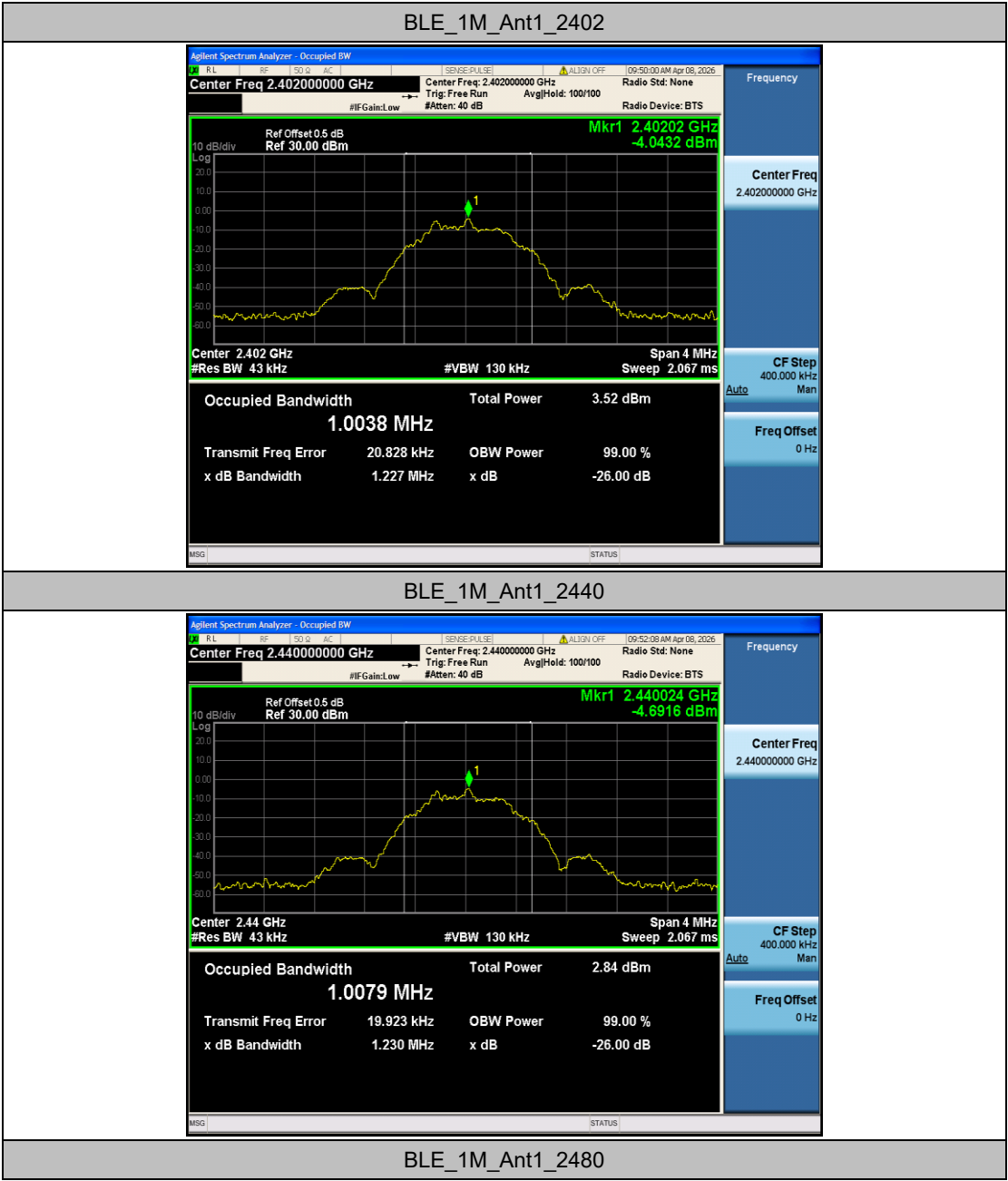


Appendix B: Occupied Channel Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0038	2401.5189	2402.5227	---	---
		2440	1.0079	2439.5160	2440.5239	---	---
		2480	1.0136	2479.5157	2480.5293	---	---

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	-3.26	≤30	PASS
		2440	-3.80	≤30	PASS
		2480	-4.08	≤30	PASS

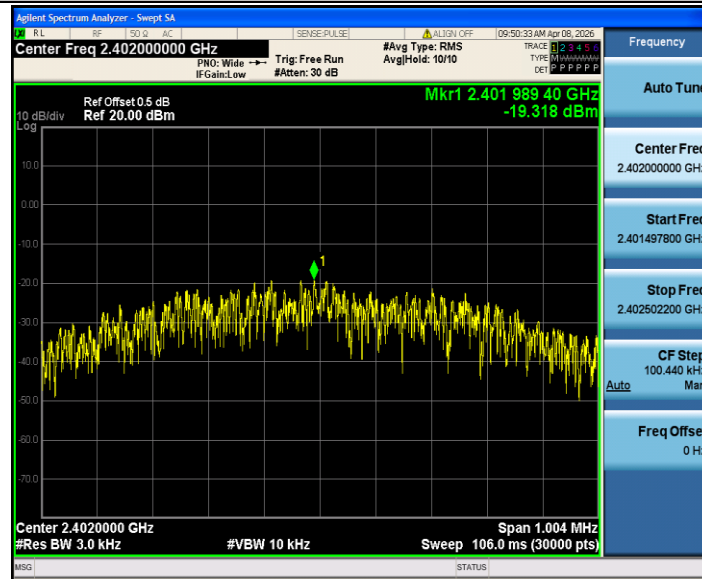
Appendix D: Maximum power spectral density

Test Result

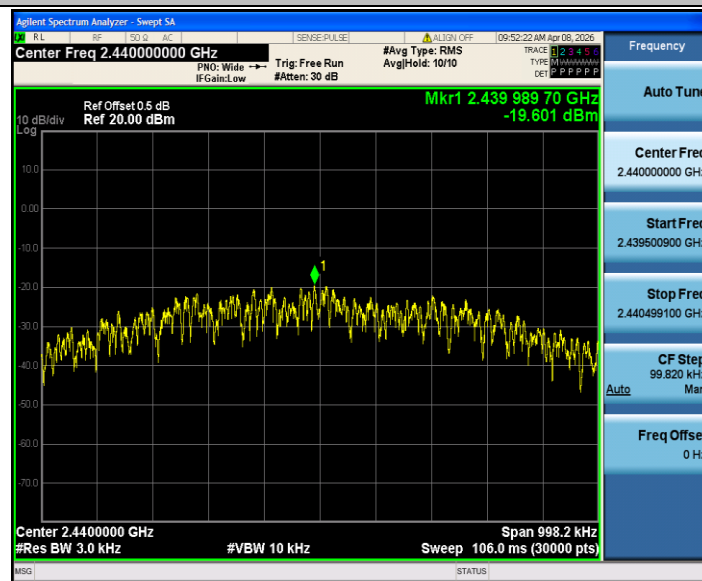
TestMode	Antenna	Freq(MHz)	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-19.32	≤8.00	PASS
		2440	-19.60	≤8.00	PASS
		2480	-19.83	≤8.00	PASS

Test Graphs

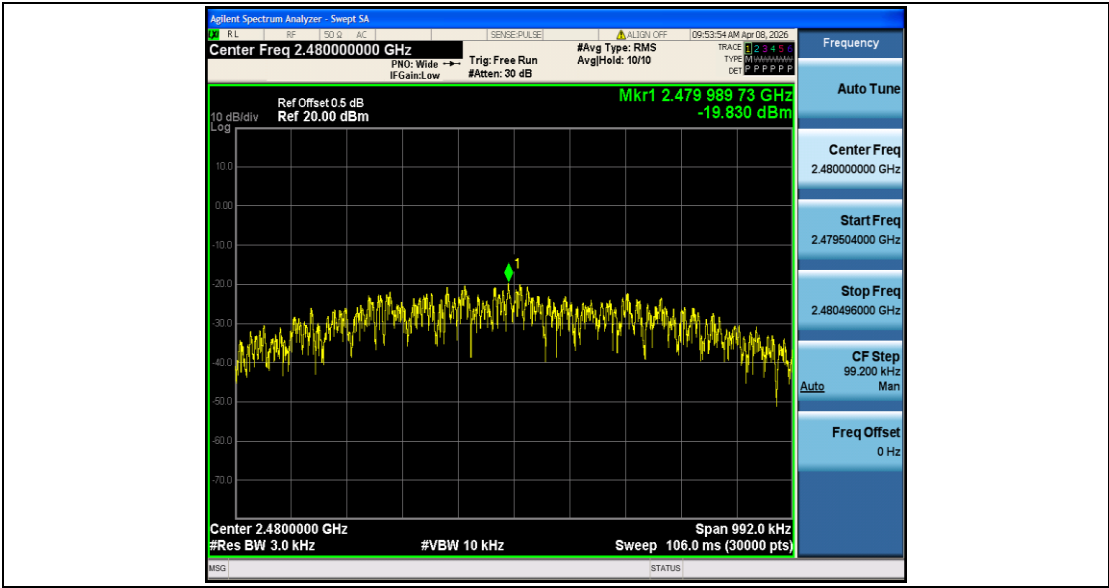
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480

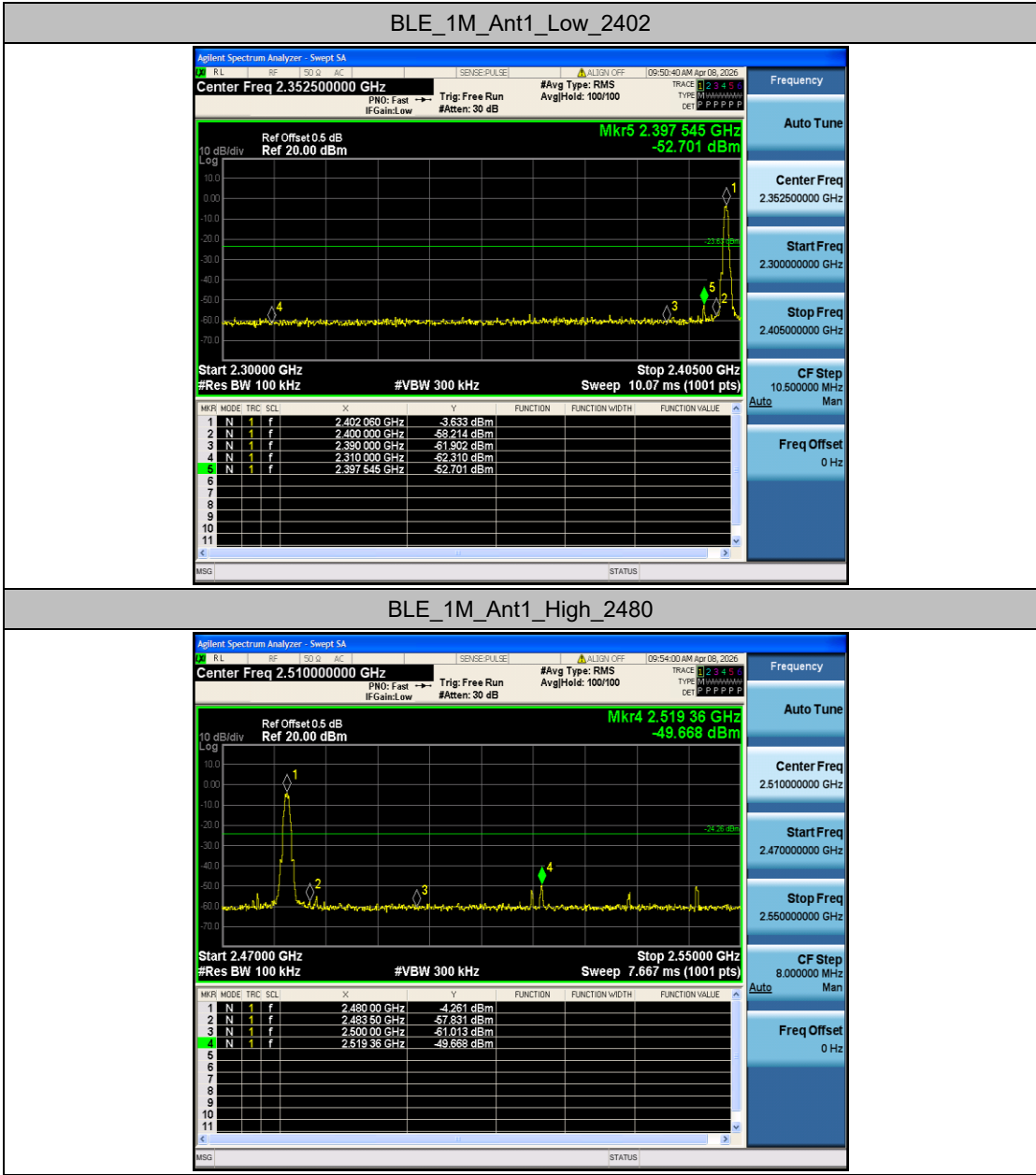


Appendix E: Band edge measurements

Test Result

TestMod e	Antenn a	ChNam e	Freq(MHz)	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdic t
BLE_1M	Ant1	Low	2402	-3.63	-52.7	≤-23.63	PASS
		High	2480	-4.26	-49.67	≤-24.26	PASS

Test Graphs



Appendix F: Conducted Spurious Emission

Test Result

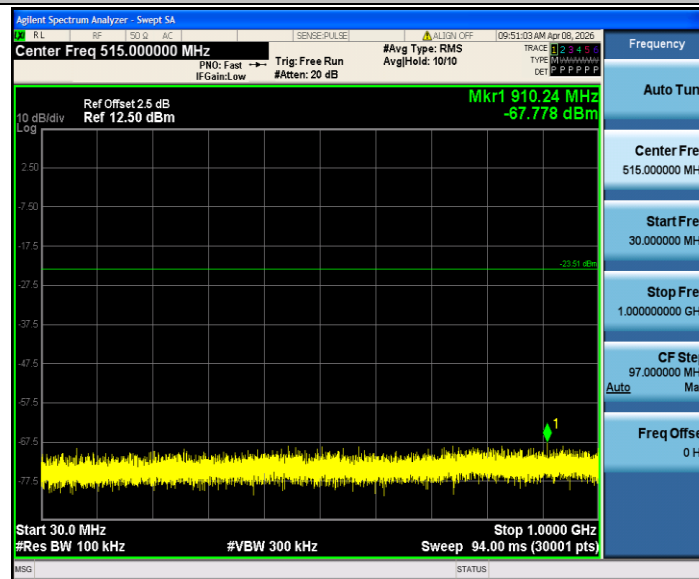
TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	-3.51	-3.51	---	PASS
			30~1000	-3.51	-67.78	≤-23.51	PASS
			1000~26500	-3.51	-48.44	≤-23.51	PASS
		2440	Reference	-4.16	-4.16	---	PASS
			30~1000	-4.16	-67.82	≤-24.16	PASS
			1000~26500	-4.16	-49.23	≤-24.16	PASS
		2480	Reference	-4.58	-4.58	---	PASS
			30~1000	-4.58	-66.05	≤-24.58	PASS
			1000~26500	-4.58	-49.83	≤-24.58	PASS

Test Graphs

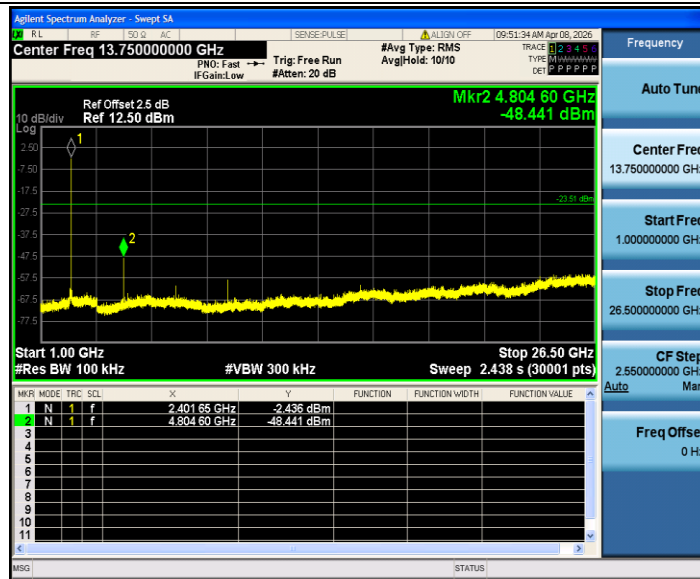
BLE_1M_Ant1_2402_0~Reference



BLE_1M_Ant1_2402_30~1000



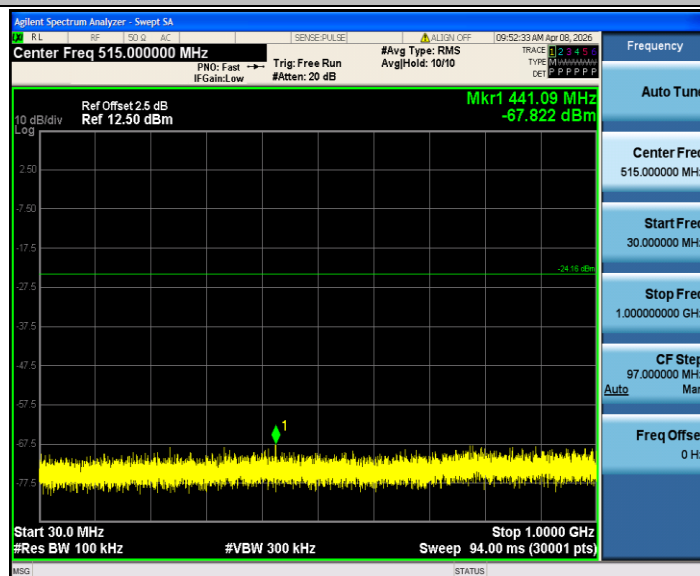
BLE_1M_Ant1_2402_1000~26500



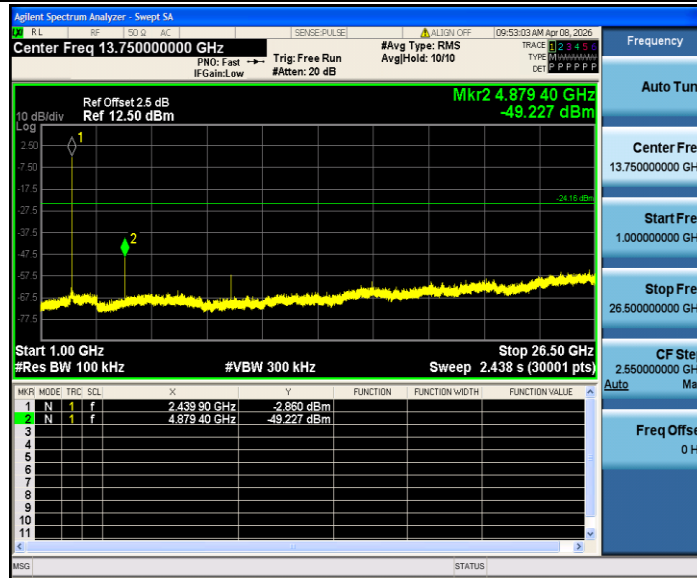
BLE_1M_Ant1_2440_0~Reference



BLE_1M_Ant1_2440_30~1000



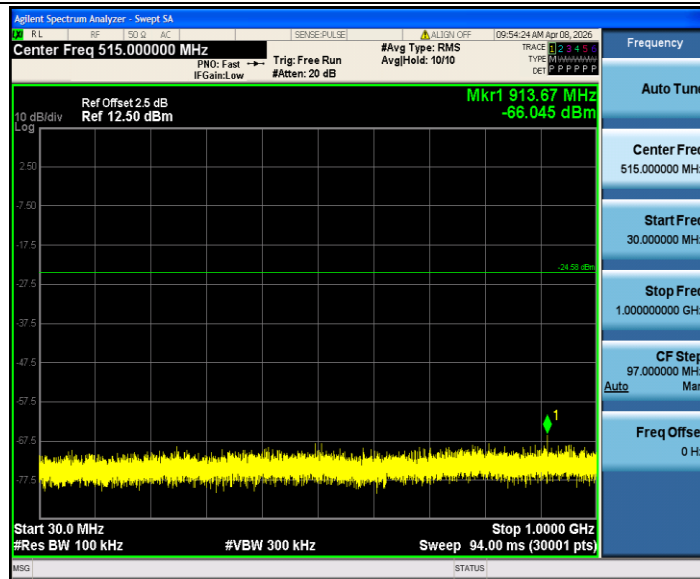
BLE_1M_Ant1_2440_1000~26500



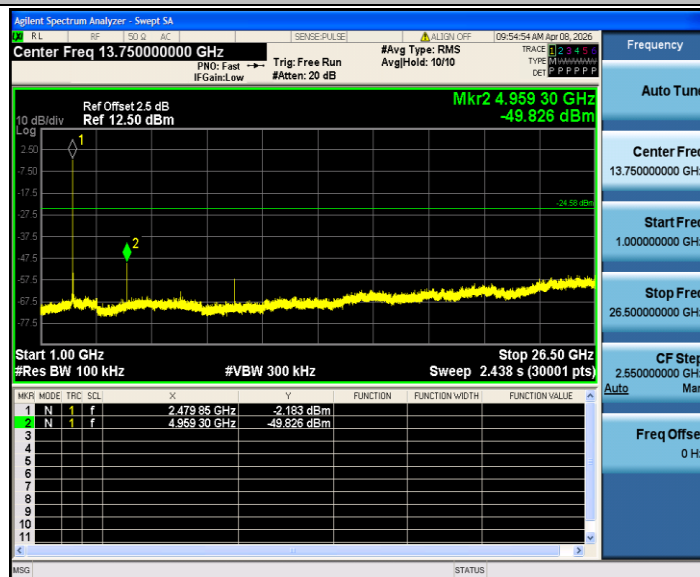
BLE_1M_Ant1_2480_0~Reference



BLE_1M_Ant1_2480_30~1000



BLE_1M_Ant1_2480_1000~26500

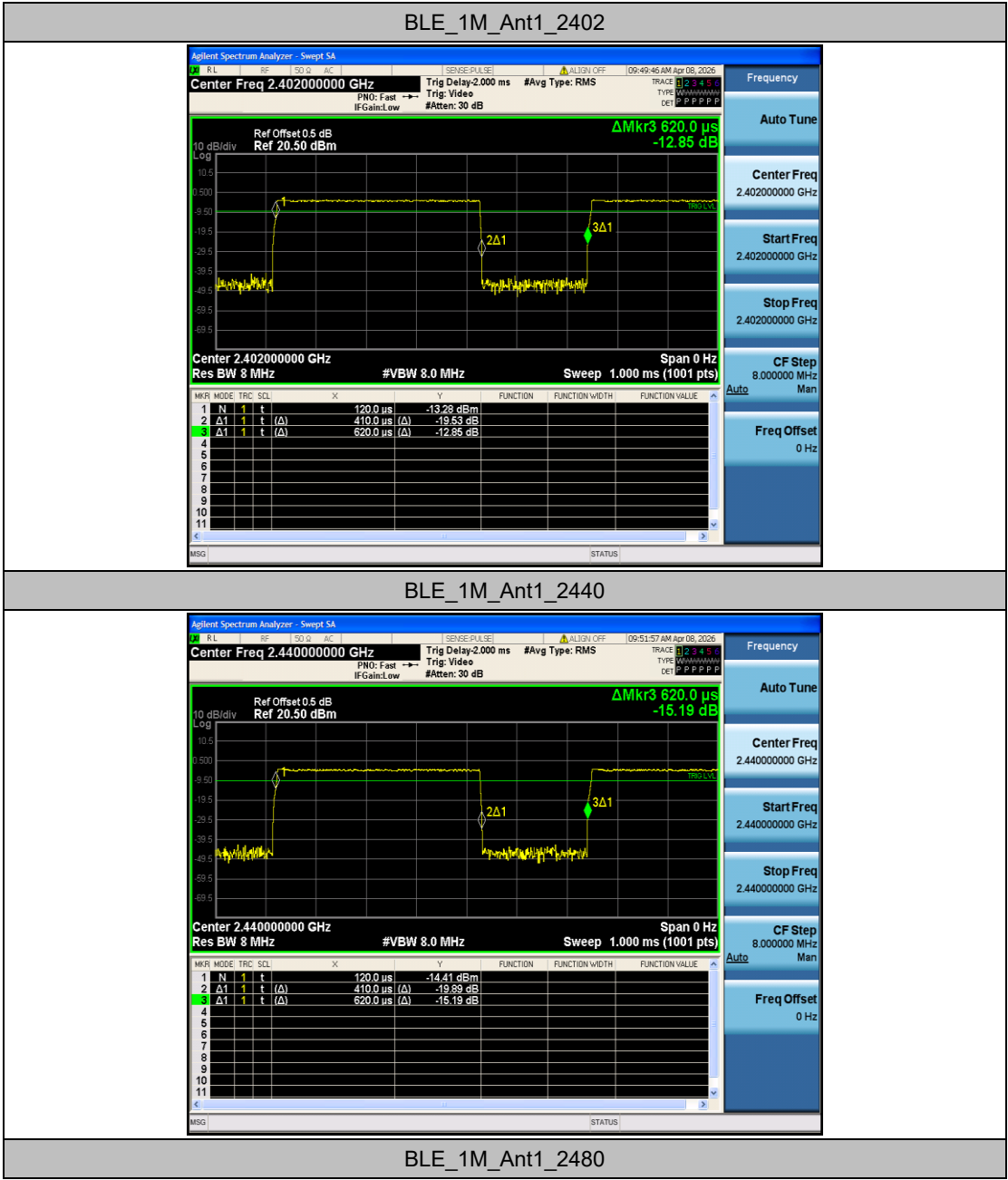


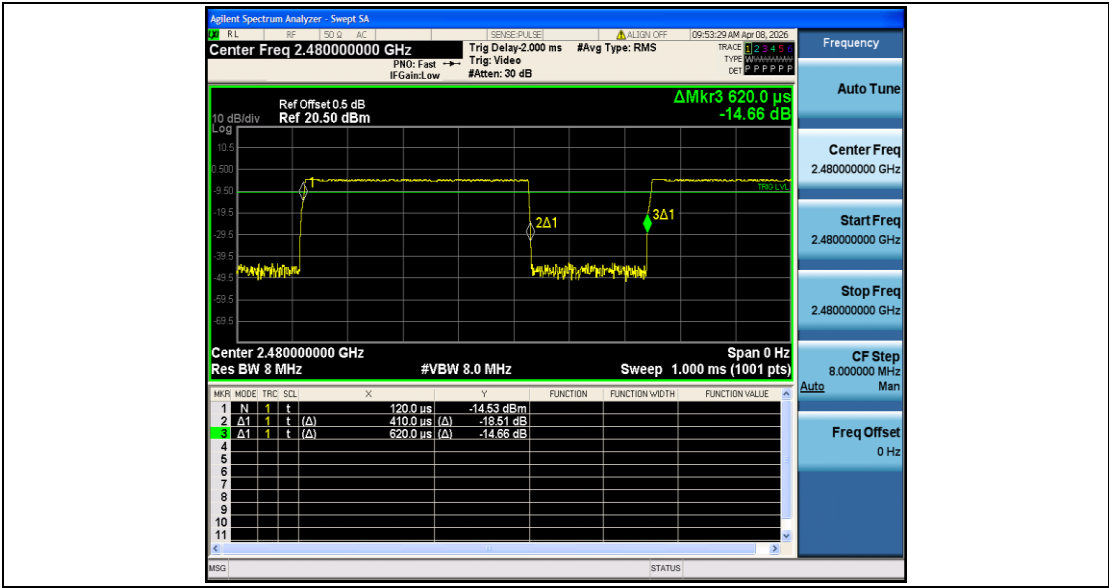
Appendix G: Duty Cycle

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

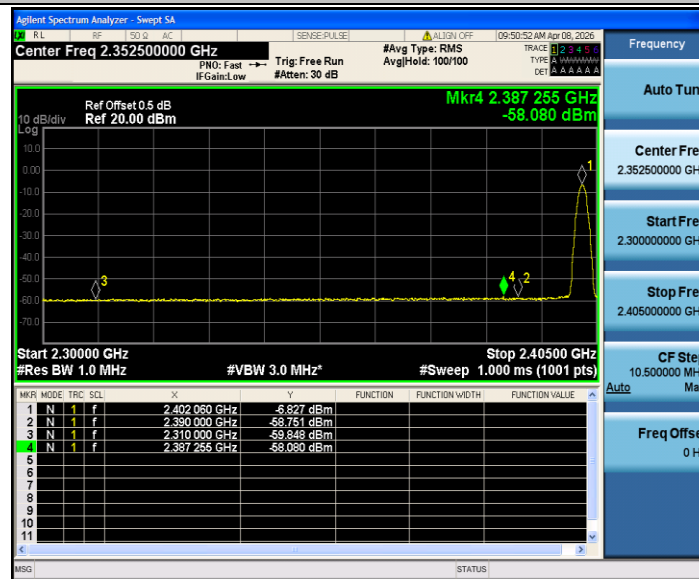
TestMode	Freq(MHz)	Detector	Freq [MHz]	Result [dBm]	Gain [dB]	DC Factor [dB]	EIRP [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
BLE_1 M	2402	AV	2310.000	-59.85	2.00	1.80	-56.05	≤-41.20	39.15	≤54	PASS
		AV	2387.255	-58.08	2.00	1.80	-54.28	≤-41.20	40.92	≤54	PASS
		AV	2390.000	-58.75	2.00	1.80	-54.95	≤-41.20	40.25	≤54	PASS
		Peak	2310.000	-52.29	2.00	0.00	-50.29	≤-21.20	44.91	≤74	PASS
		Peak	2376.335	-47.97	2.00	0.00	-45.97	≤-21.20	49.23	≤74	PASS
		Peak	2390.000	-51.96	2.00	0.00	-49.96	≤-21.20	45.24	≤74	PASS
	2480	AV	2483.500	-58.65	2.00	1.80	-54.85	≤-41.20	40.35	≤54	PASS
		AV	2484.080	-57.74	2.00	1.80	-53.94	≤-41.20	41.26	≤54	PASS
		AV	2500.000	-58.85	2.00	1.80	-55.05	≤-41.20	40.15	≤54	PASS
		Peak	2483.500	-49.22	2.00	0.00	-47.22	≤-21.20	47.98	≤74	PASS
		Peak	2496.240	-48.55	2.00	0.00	-46.55	≤-21.20	48.65	≤74	PASS
		Peak	2500.000	-50.36	2.00	0.00	-48.36	≤-21.20	46.84	≤74	PASS

Note:

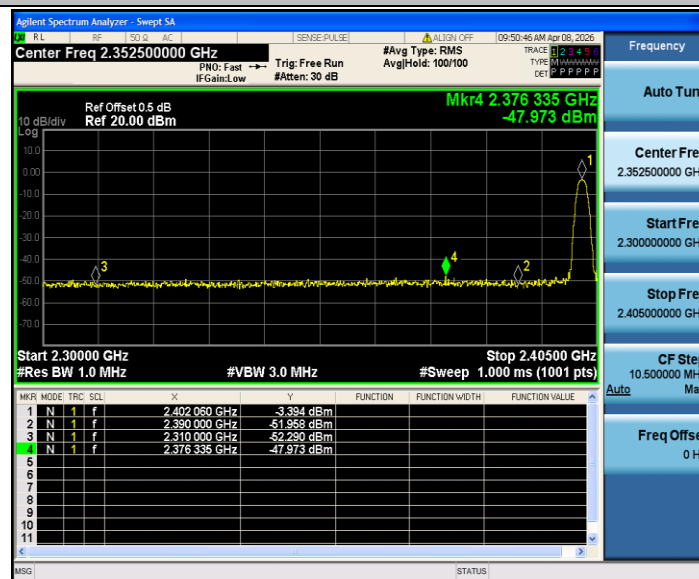
1. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

Test Graphs

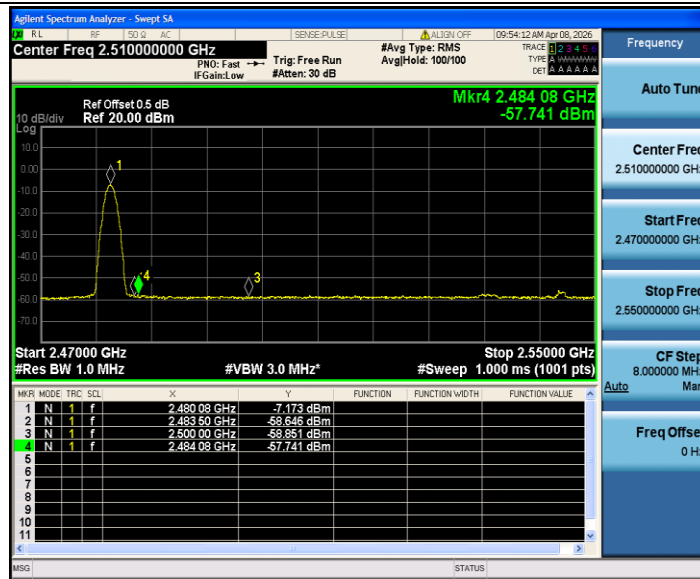
BLE_1M_Ant1_Low_2402_AV



BLE_1M_Ant1_Low_2402_Peak



BLE_1M_Ant1_High_2480_AV



BLE_1M_Ant1_High_2480_Peak

