

FCC Appendix RF Test Data for BLE

FCC ID : 2BPGB-VH1981

Company : VIVOHOME INC.

EUT : Bathroom Exhaust Fan with Heater

Model Number : VH1981

Report No. : CTA26092100101

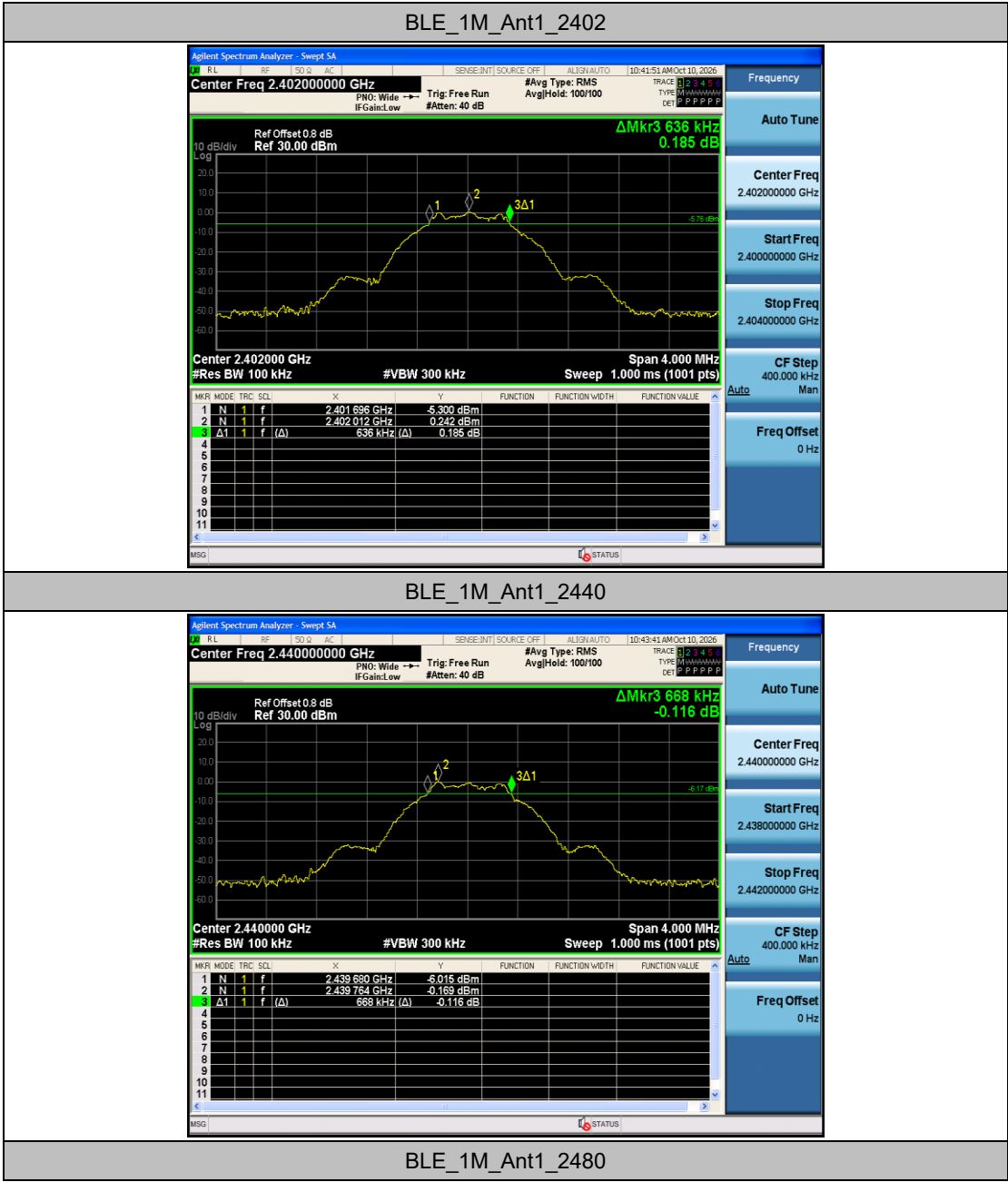
Reviewed By : Eric Wang

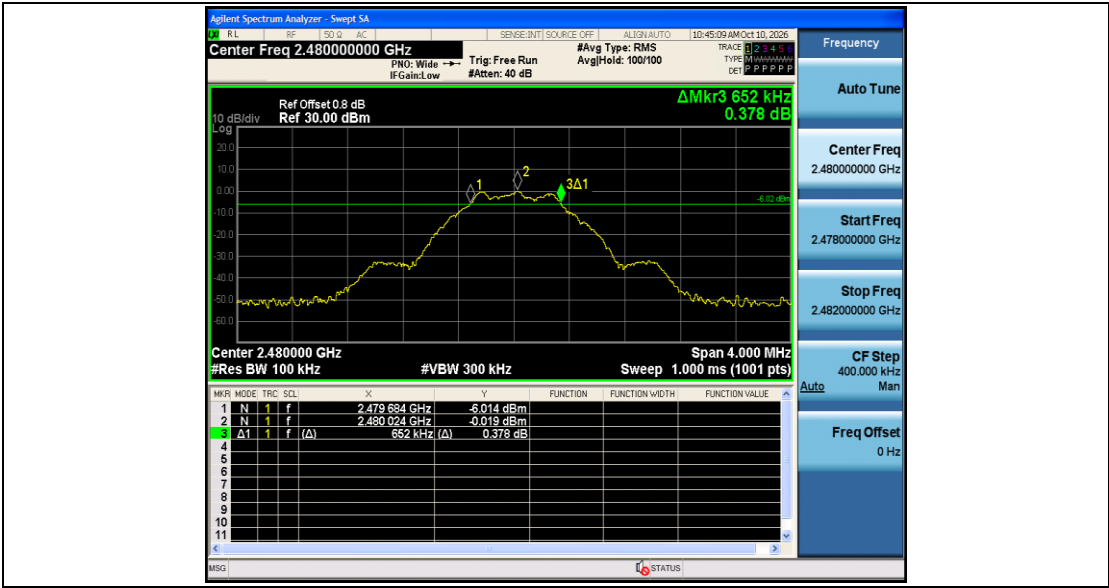
Appendix A: DTS Bandwidth

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	0.668	2439.680	2440.348	0.5	PASS
		2480	0.652	2479.684	2480.336	0.5	PASS

Test Graphs



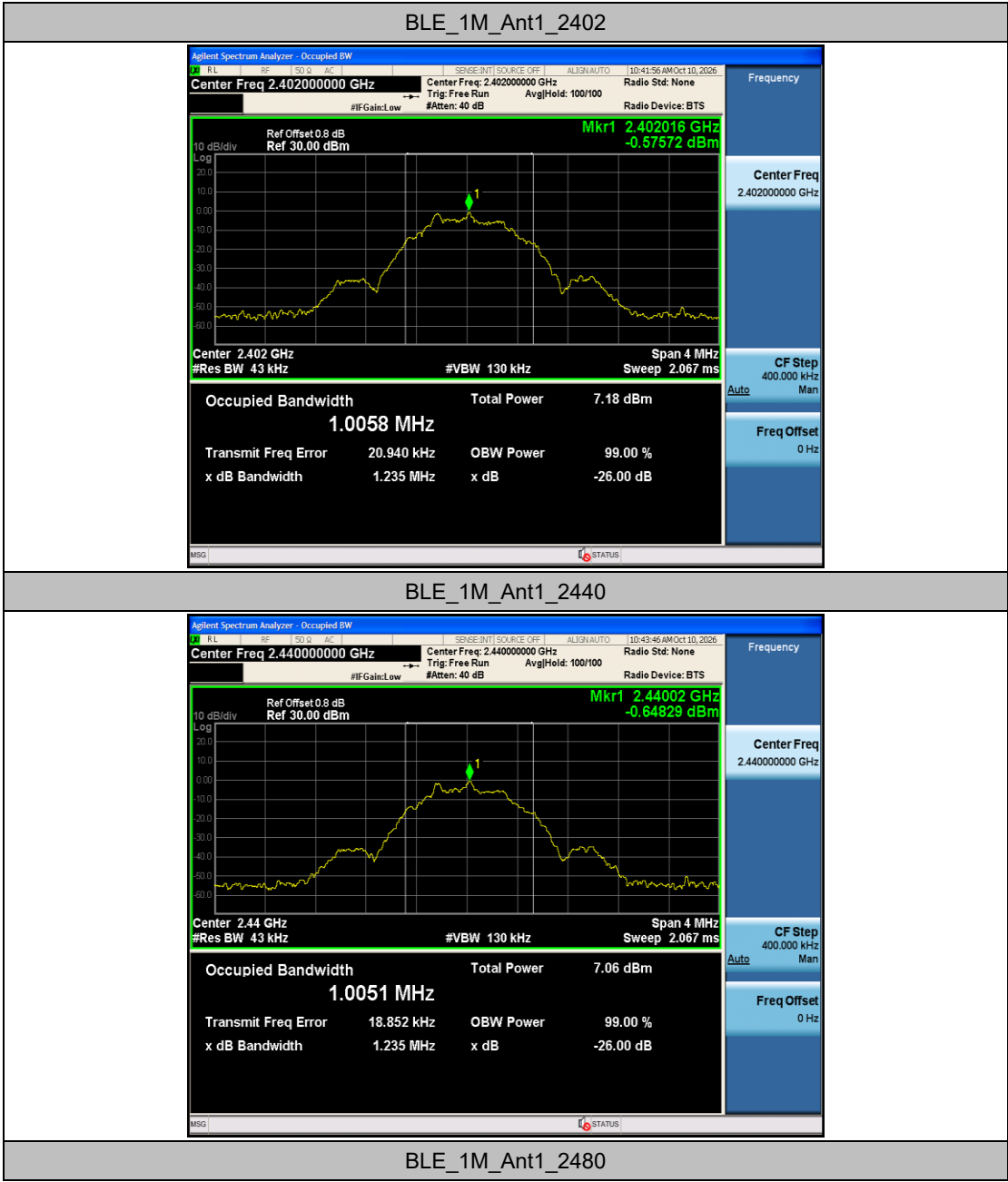


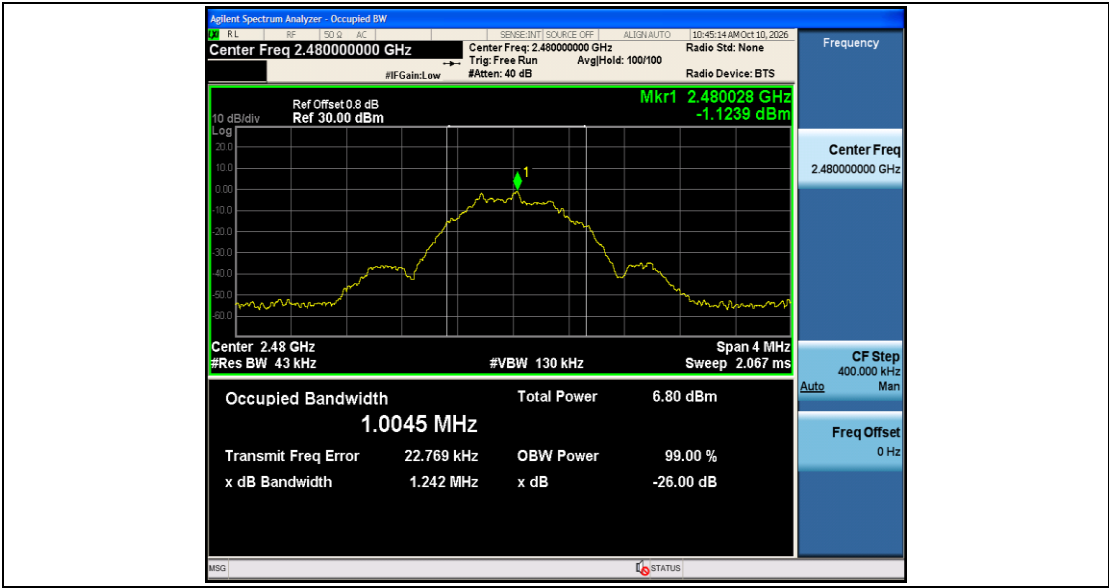
Appendix B: Occupied Channel Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0058	2401.5180	2402.5238	---	---
		2440	1.0051	2439.5163	2440.5214	---	---
		2480	1.0045	2479.5205	2480.5250	---	---

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	0.42	≤30	PASS
		2440	0.34	≤30	PASS
		2480	0.12	≤30	PASS

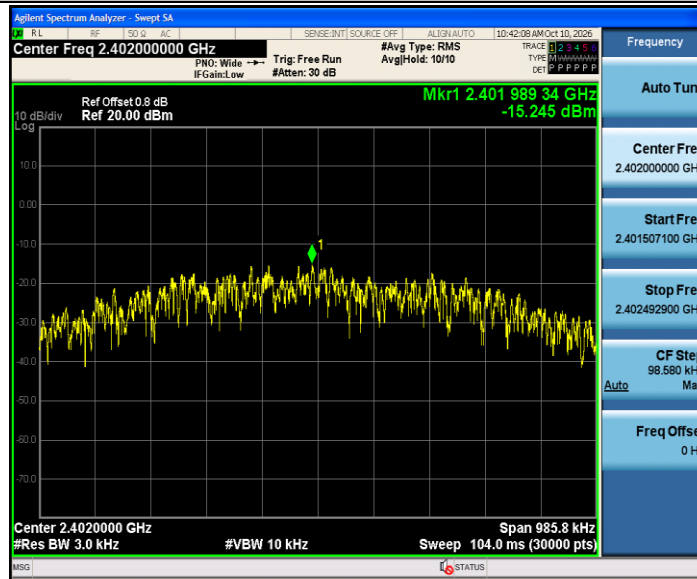
Appendix D: Maximum power spectral density

Test Result

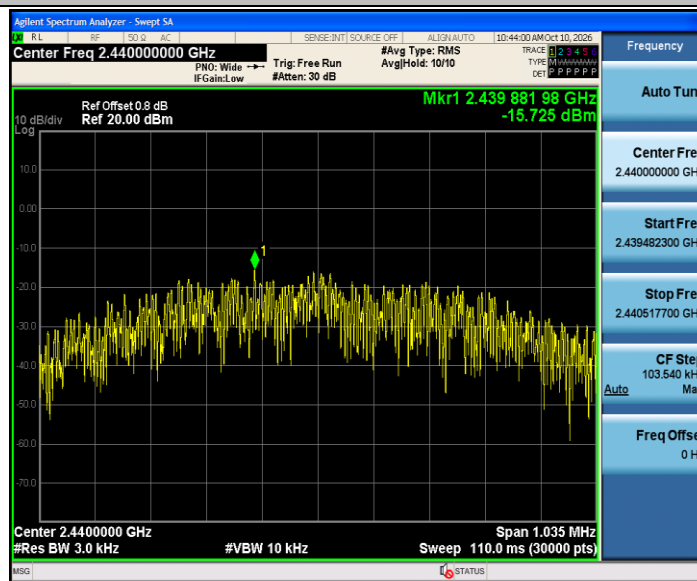
TestMode	Antenna	Freq(MHz)	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-15.25	≤8.00	PASS
		2440	-15.73	≤8.00	PASS
		2480	-15.39	≤8.00	PASS

Test Graphs

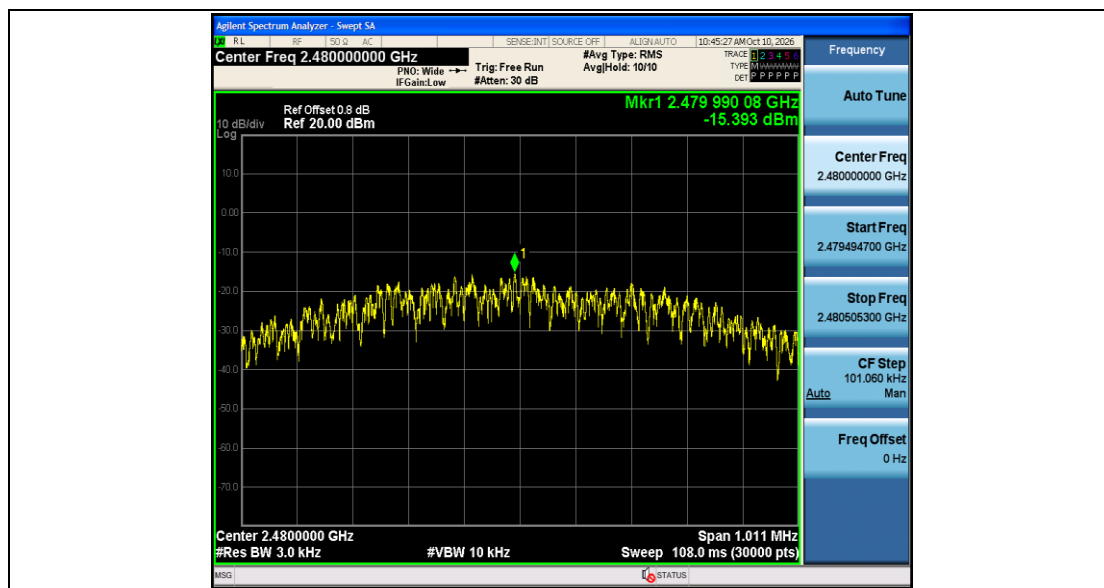
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480

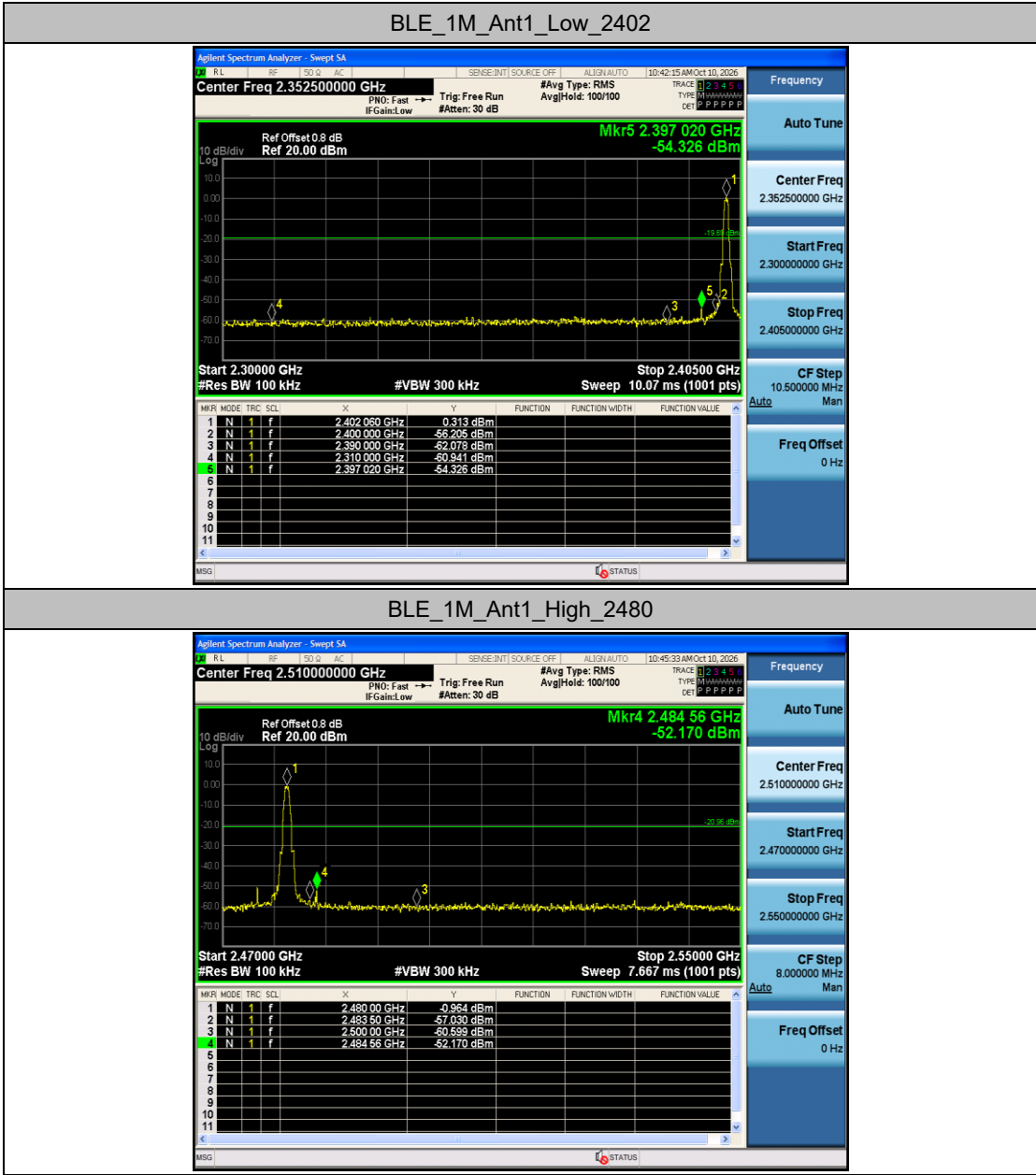


Appendix E: Band edge measurements

Test Result

TestMode	Antenna	Channel	Freq(MHz)	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	0.31	-54.33	≤-19.69	PASS
		High	2480	-0.96	-52.17	≤-20.96	PASS

Test Graphs

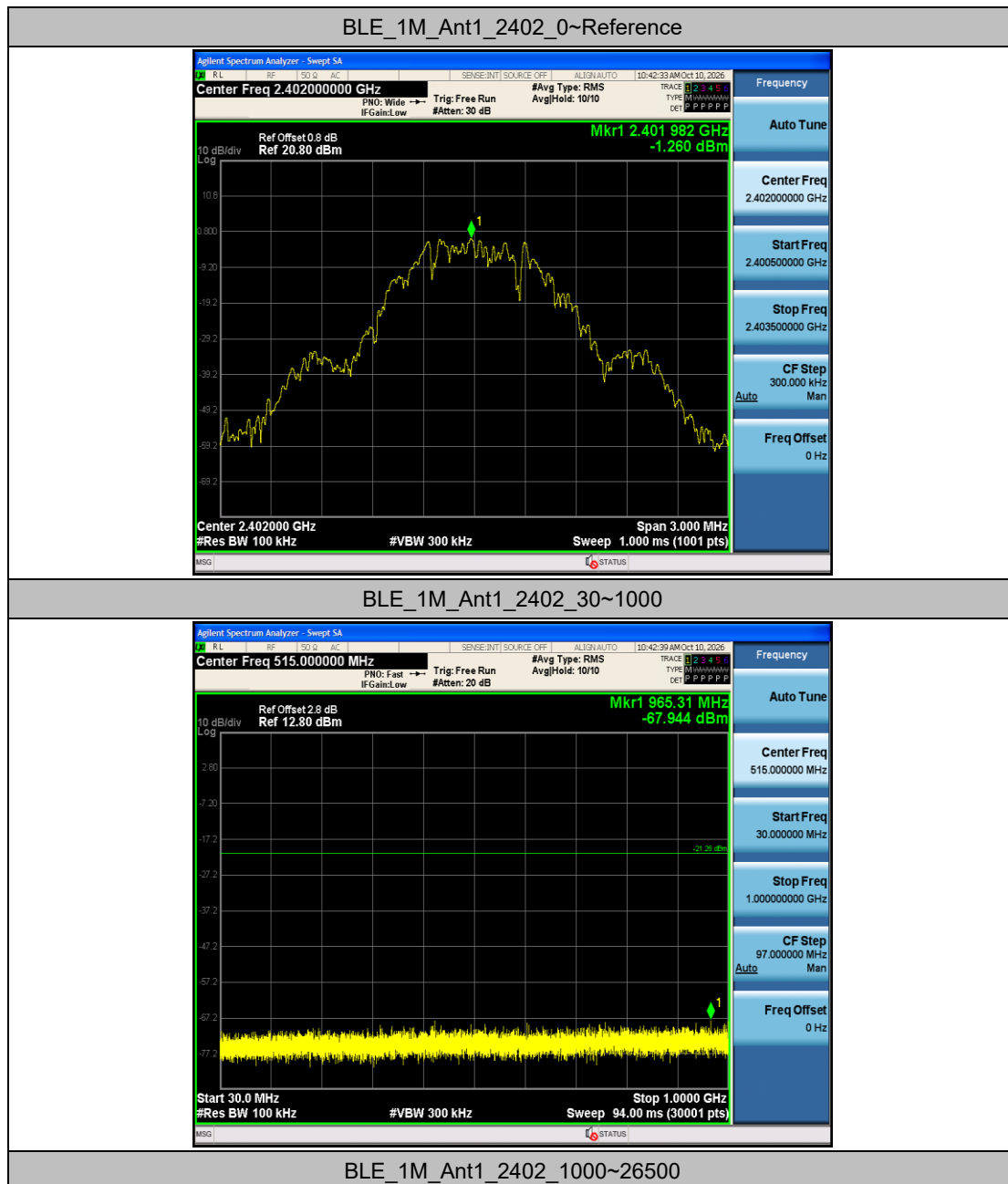


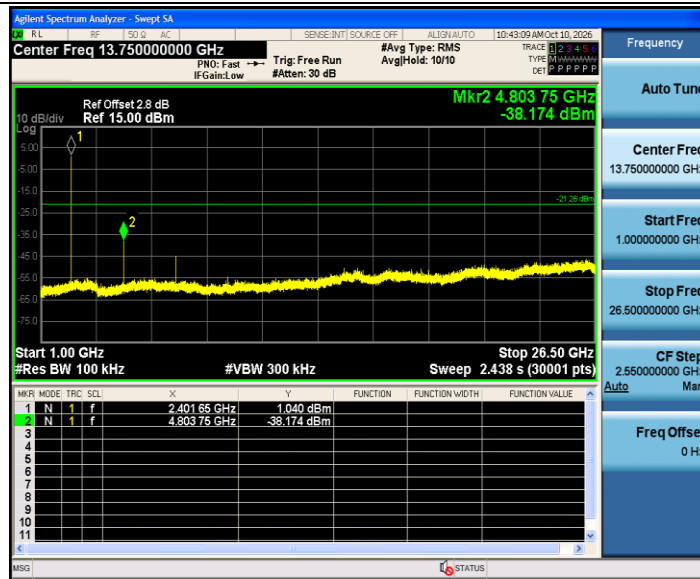
Appendix F: Conducted Spurious Emission

Test Result

TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	-1.26	-1.26	---	PASS
			30~1000	-1.26	-67.94	≤-21.26	PASS
			1000~26500	-1.26	-38.17	≤-21.26	PASS
		2440	Reference	-0.40	-0.40	---	PASS
			30~1000	-0.40	-65.29	≤-20.4	PASS
			1000~26500	-0.40	-42.82	≤-20.4	PASS
		2480	Reference	-0.51	-0.51	---	PASS
			30~1000	-0.51	-68.09	≤-20.51	PASS
			1000~26500	-0.51	-42.71	≤-20.51	PASS

Test Graphs

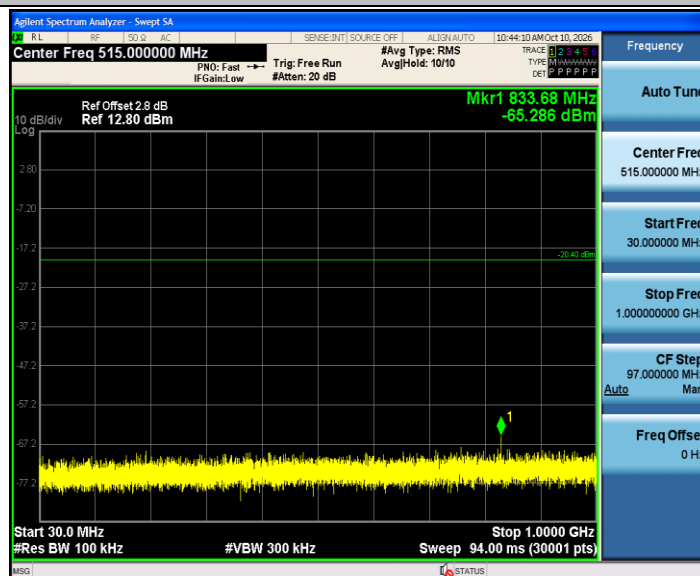




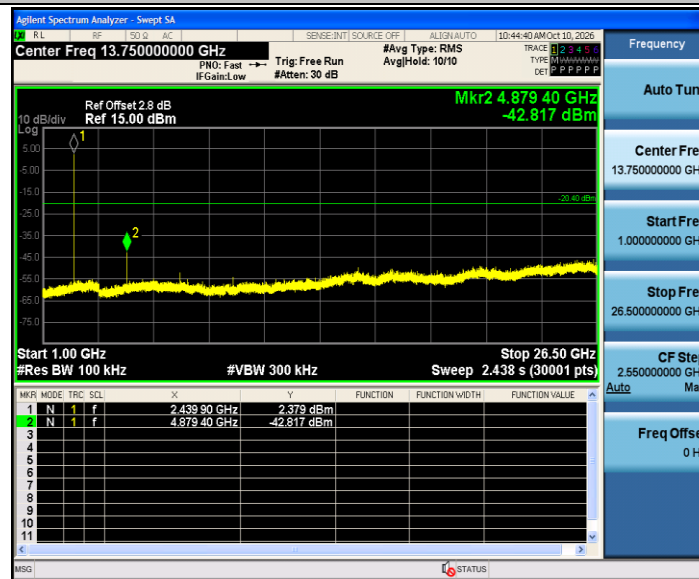
BLE_1M_Ant1_2440_0~Reference



BLE_1M_Ant1_2440_30~1000



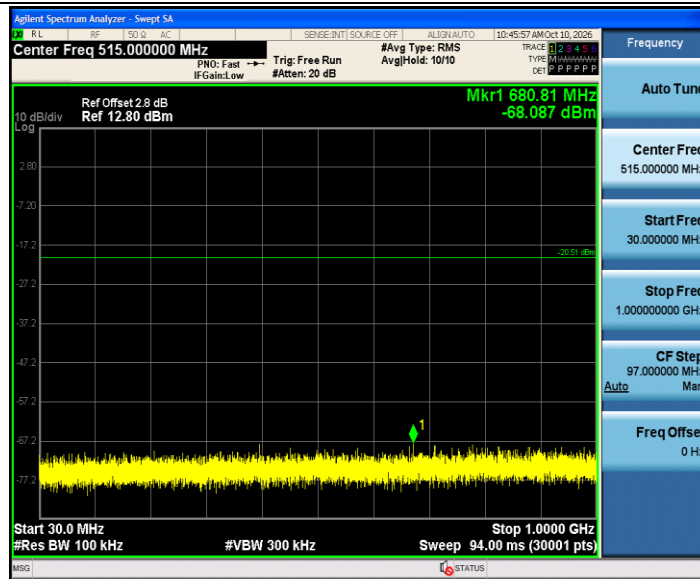
BLE_1M_Ant1_2440_1000~26500



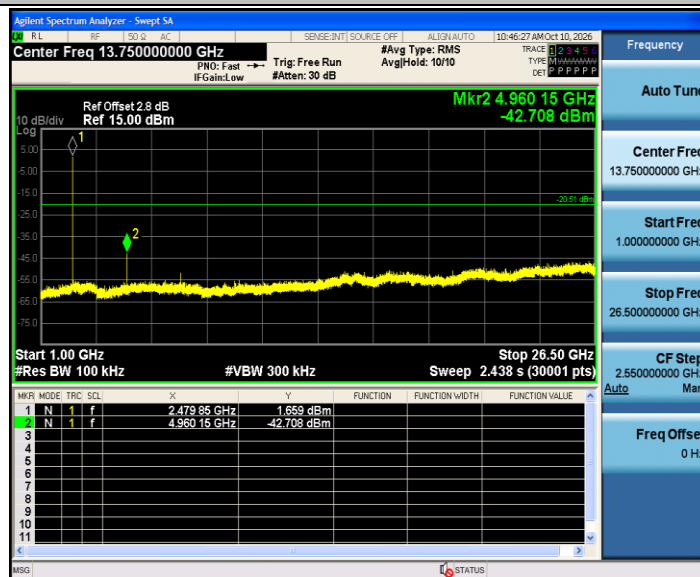
BLE_1M_Ant1_2480_0~Reference



BLE_1M_Ant1_2480_30~1000



BLE_1M_Ant1_2480_1000~26500

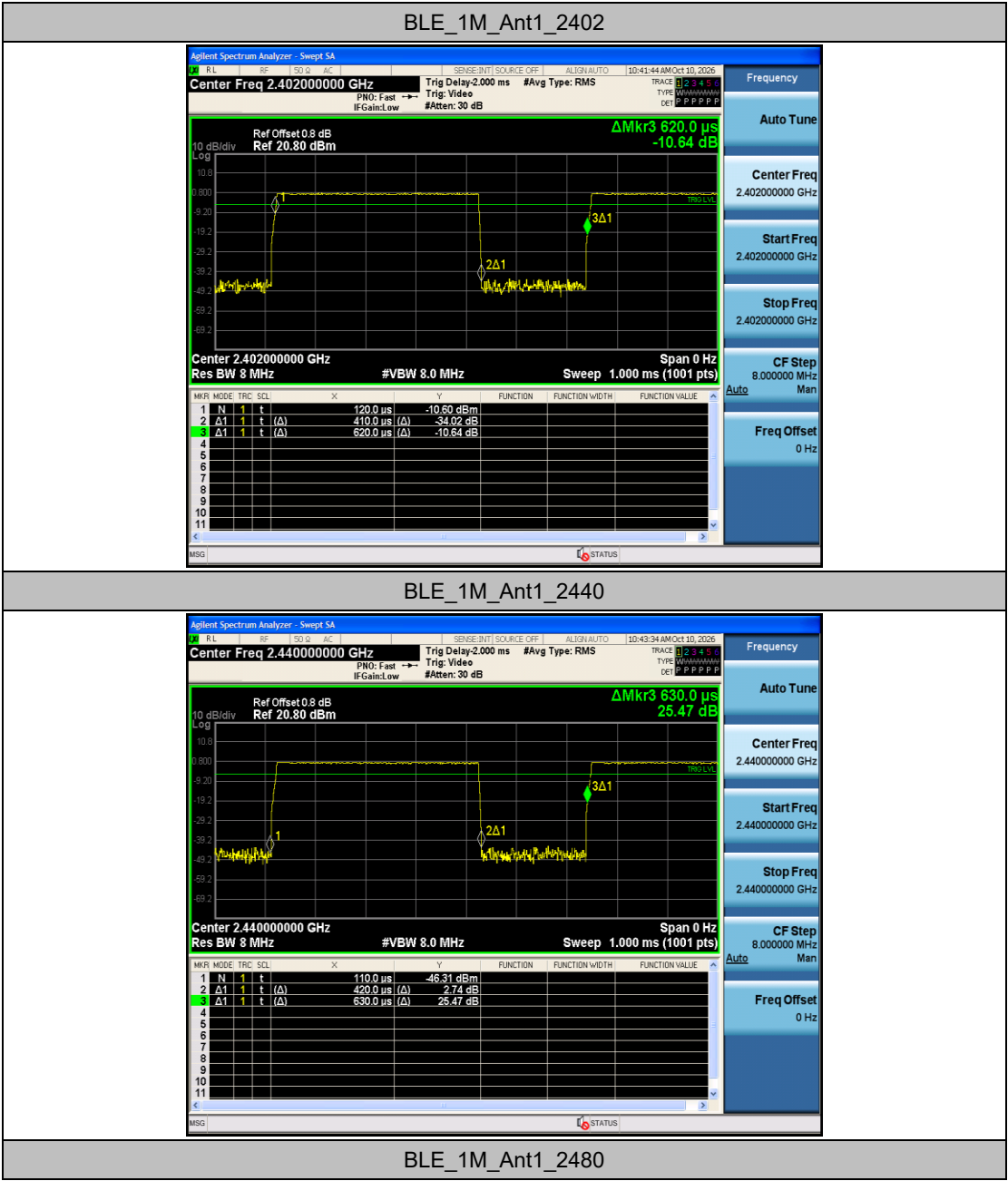


Appendix G: Duty Cycle

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	0.42	0.63	0.6667	66.67	1.76	---	---
		2480	0.41	0.62	0.6613	66.13	1.80	---	---

Test Graphs



Appendix H: Emissions in Restricted Bands

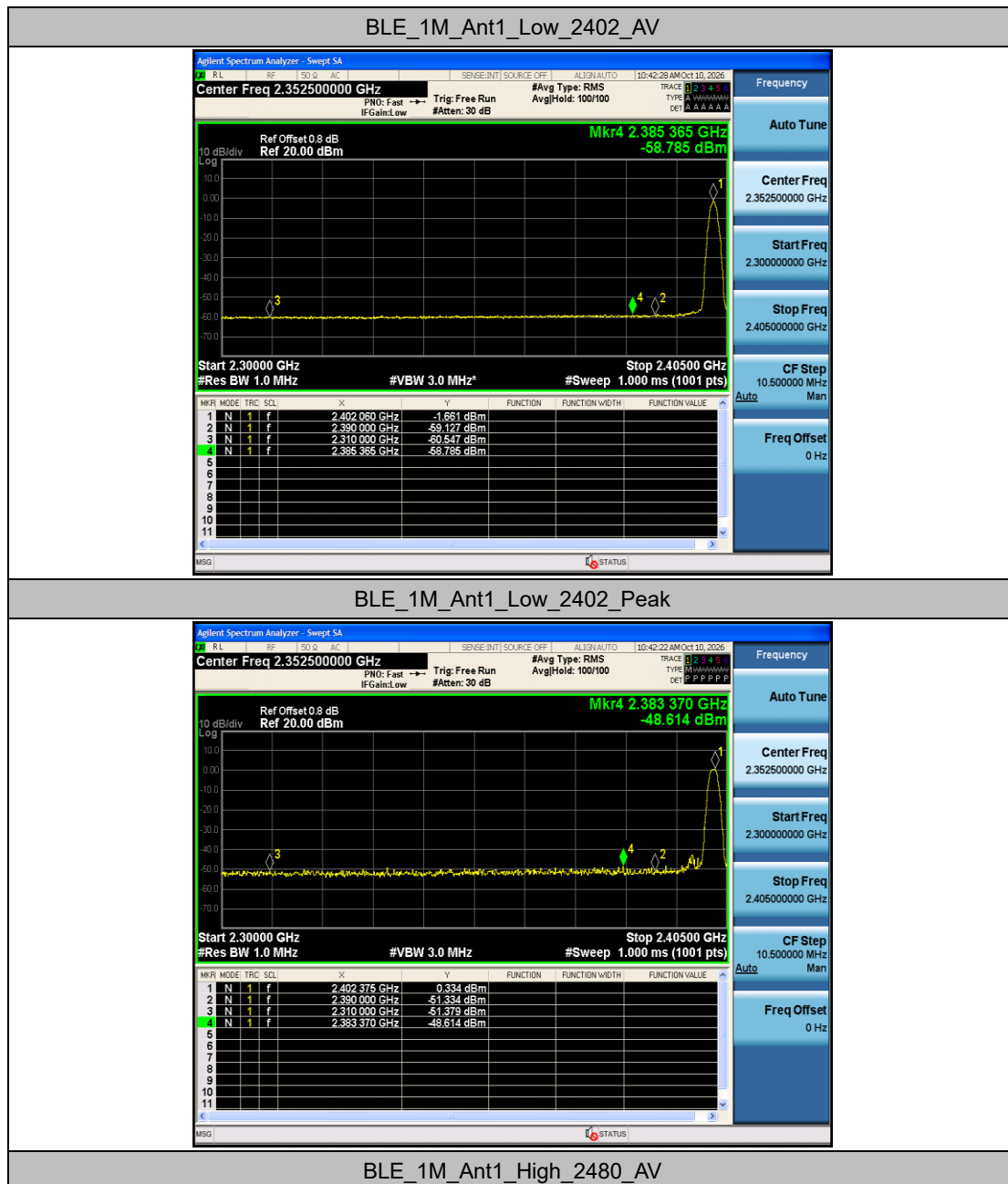
Test Result

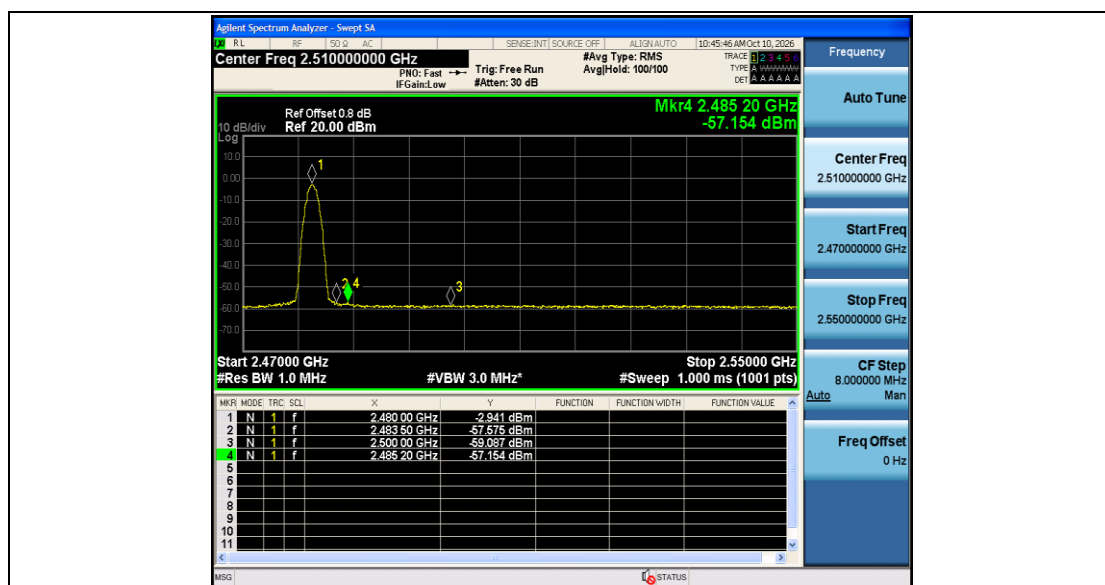
TestMode	Antenna	Channel	Freq(MHz)	Detector	Freq [MHz]	Result [dBm]	Gain [dB]	DC Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
BLE_1M	Ant1	Low	2402	AV	2310.000	-60.55	2.00	1.80	38.45	≤54	PASS
				AV	2385.365	-58.78	2.00	1.80	40.22	≤54	PASS
				AV	2390.000	-59.13	2.00	1.80	39.87	≤54	PASS
				Peak	2310.000	-51.38	2.00	0.00	45.82	≤74	PASS
				Peak	2383.370	-48.61	2.00	0.00	48.59	≤74	PASS
				Peak	2390.000	-51.33	2.00	0.00	45.87	≤74	PASS
		High	2480	AV	2483.500	-57.58	2.00	1.80	41.42	≤54	PASS
				AV	2485.200	-57.15	2.00	1.80	41.85	≤54	PASS
				AV	2500.000	-59.09	2.00	1.80	39.91	≤54	PASS
				Peak	2483.500	-47.92	2.00	0.00	49.28	≤74	PASS
				Peak	2484.400	-44.6	2.00	0.00	52.60	≤74	PASS
				Peak	2500.000	-51.07	2.00	0.00	46.13	≤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

