

FCC Appendix RF Test Data for BLE

FCC ID : 2A3ZO-020

Company : Hong Kong Etech Groups Ltd.

EUT : Smart Outdoor Plug

Model Number : ETS-C-020 (MPP4-1002-BLK)

Report No. : CTA25092301401

Reviewed By : Eric Wang

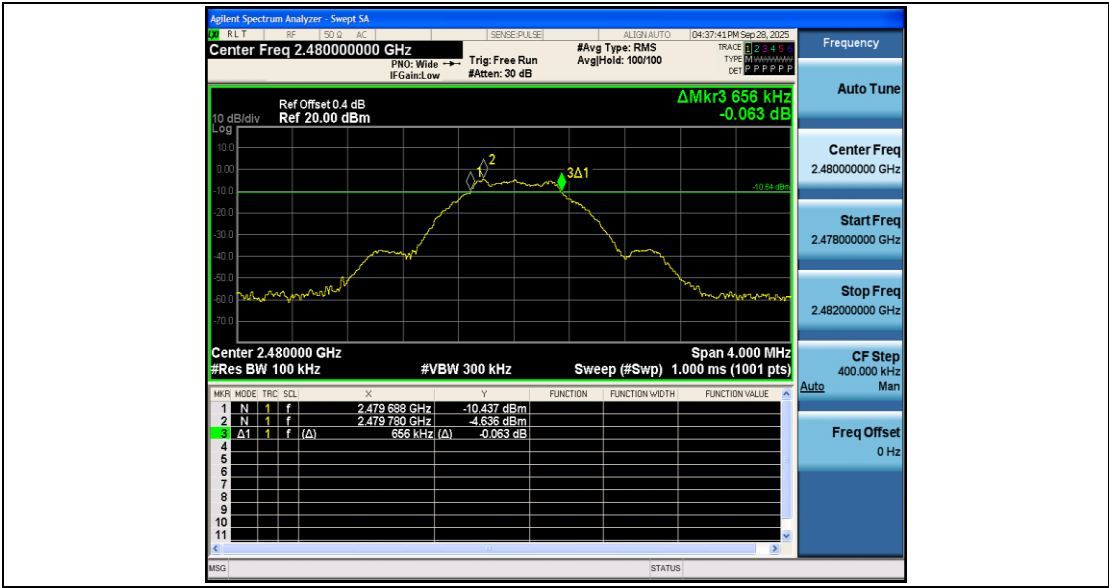
Appendix A: DTS Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.644	2401.696	2402.340	0.5	PASS
		2440	0.644	2439.696	2440.340	0.5	PASS
		2480	0.656	2479.688	2480.344	0.5	PASS

Test Graphs



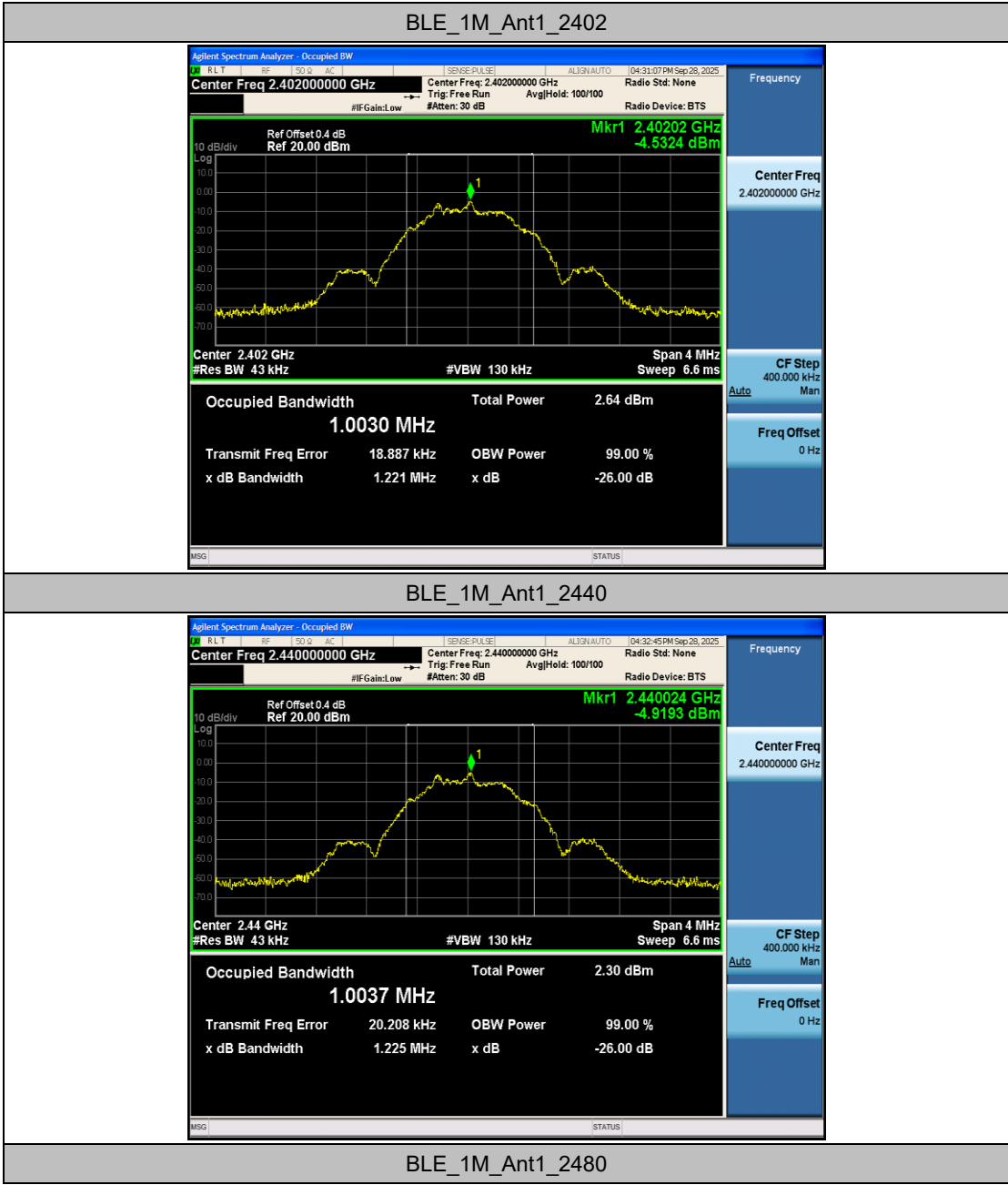


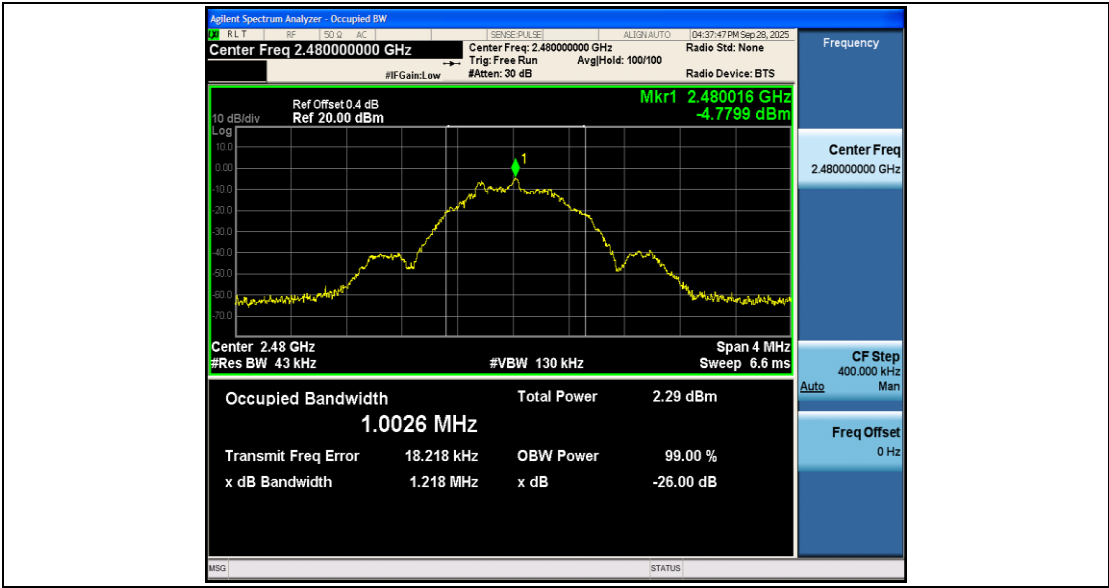
Appendix B: Occupied Channel Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0030	2401.5174	2402.5204	---	---
		2440	1.0037	2439.5184	2440.5221	---	---
		2480	1.0026	2479.5169	2480.5195	---	---

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	-3.46	≤30	PASS
		2440	-3.75	≤30	PASS
		2480	-3.77	≤30	PASS

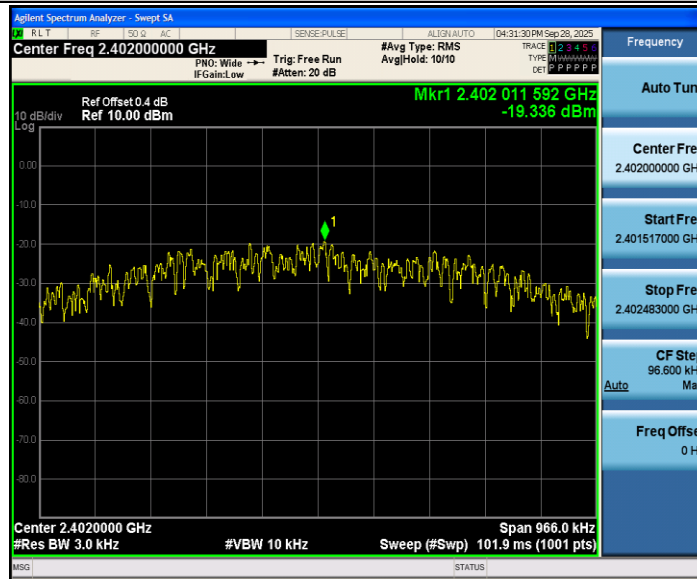
Appendix D: Maximum power spectral density

Test Result

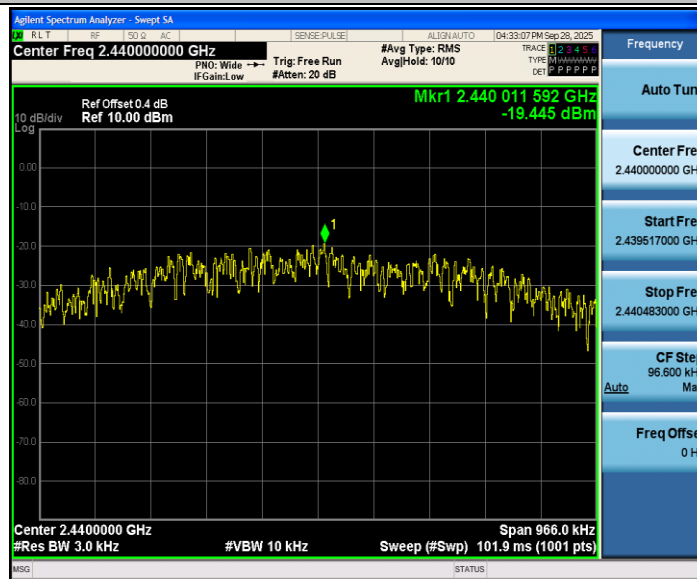
TestMode	Antenna	Freq(MHz)	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-19.34	≤8.00	PASS
		2440	-19.45	≤8.00	PASS
		2480	-19.54	≤8.00	PASS

Test Graphs

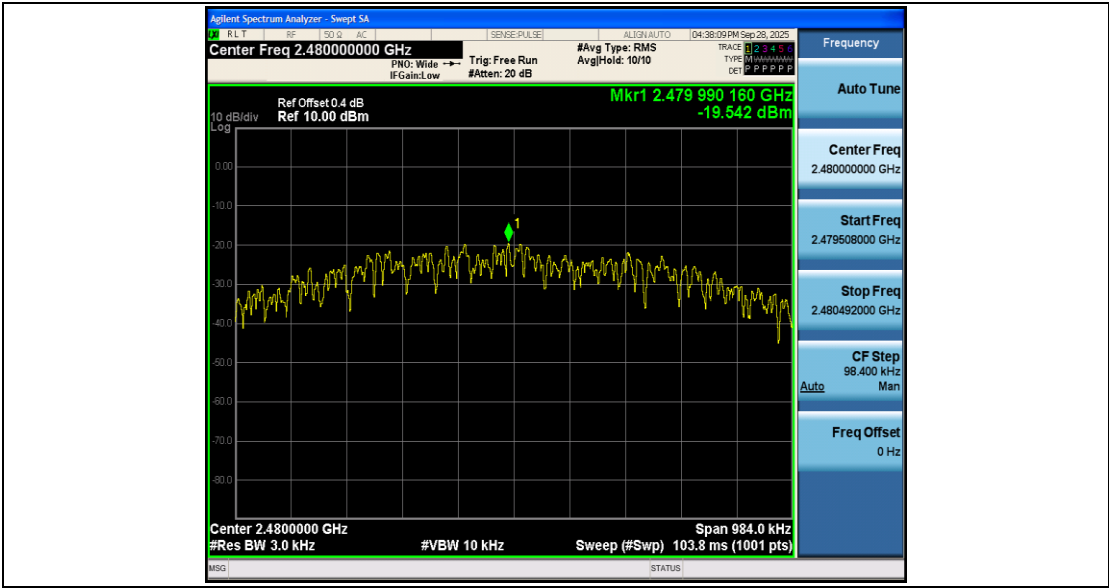
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480

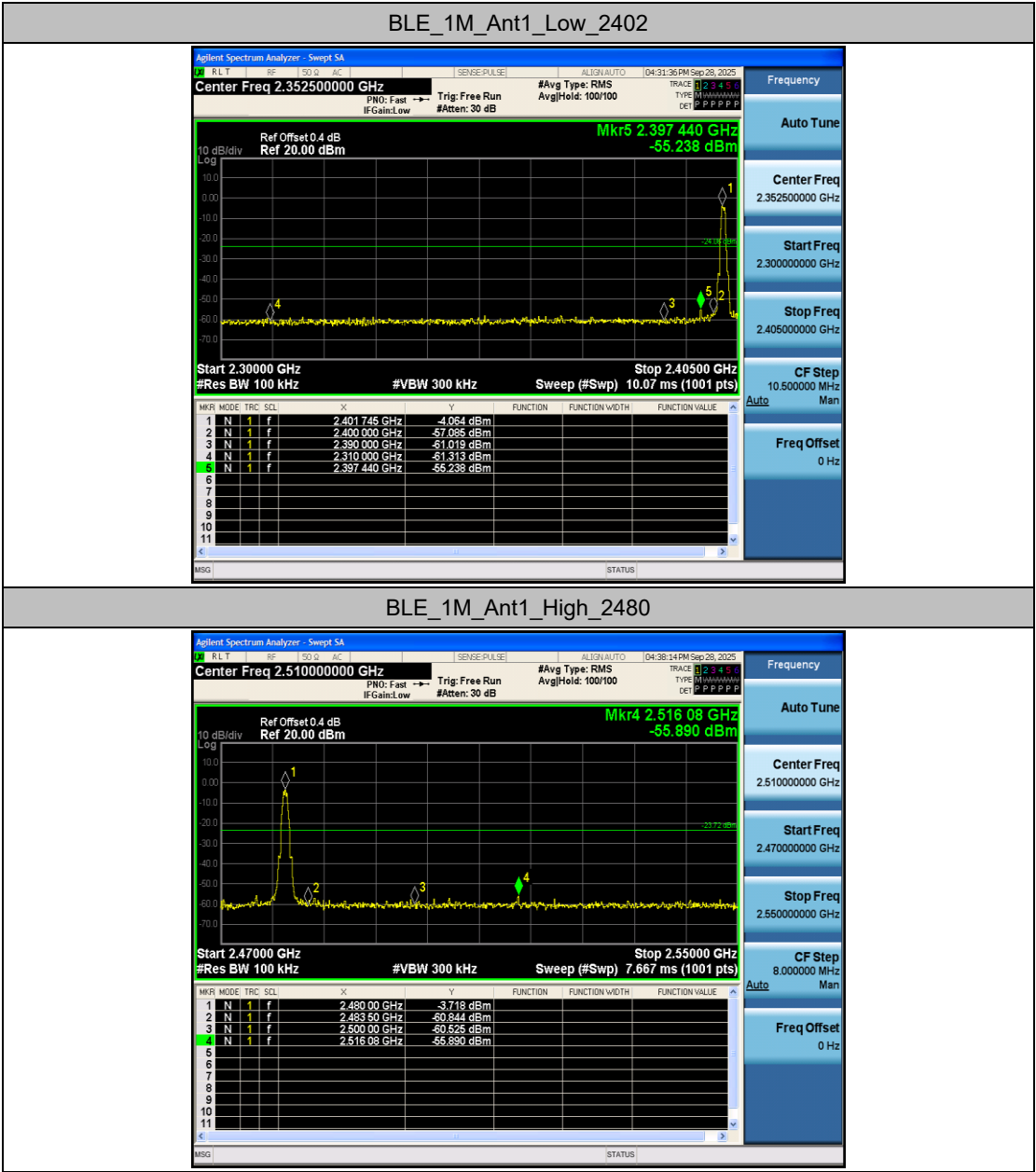


Appendix E: Band edge measurements

Test Result

TestMod e	Antenn a	ChNam e	Freq(MHz)	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdic t
BLE_1M	Ant1	Low	2402	-4.06	-55.24	≤-24.06	PASS
		High	2480	-3.72	-55.89	≤-23.72	PASS

Test Graphs

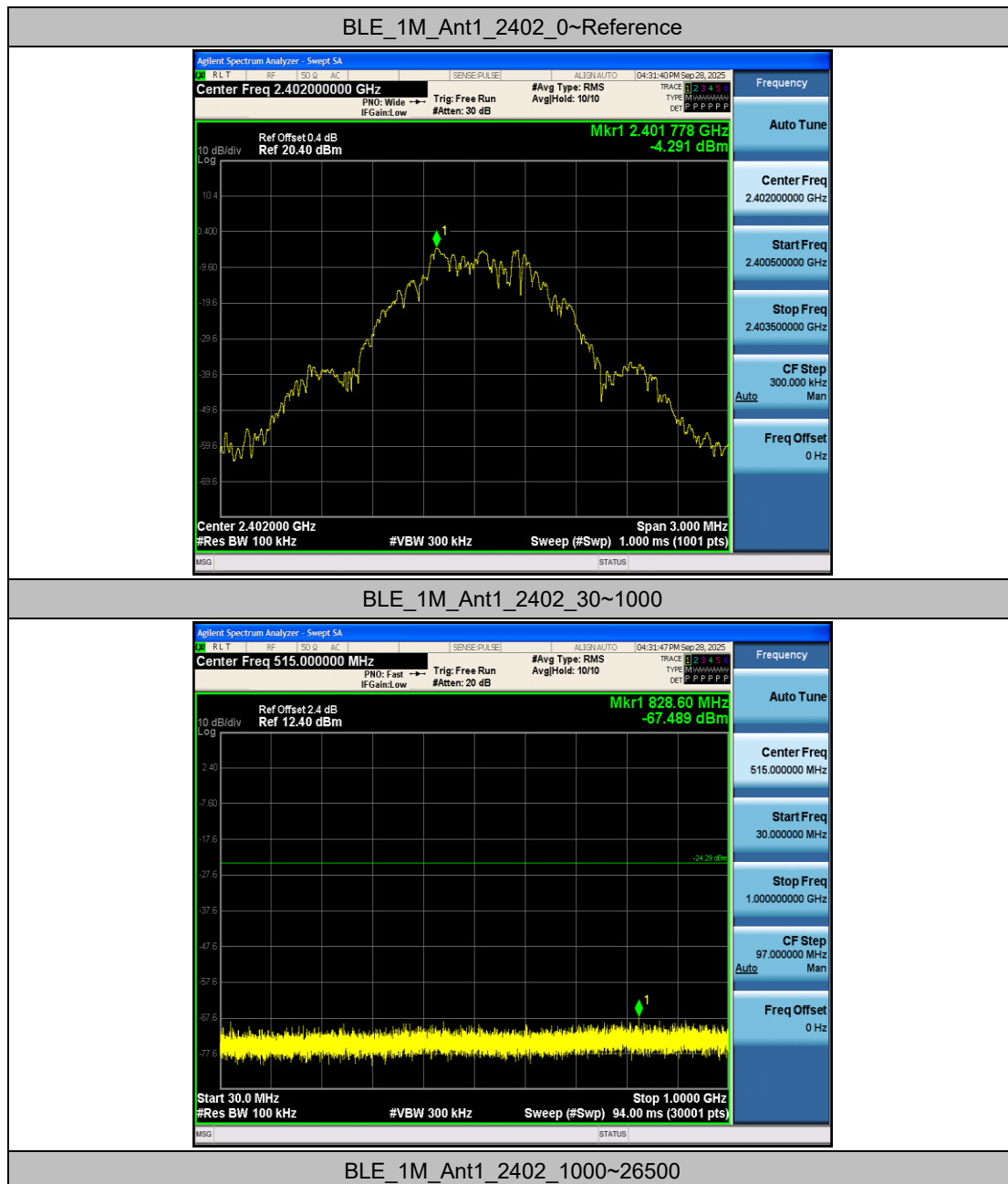


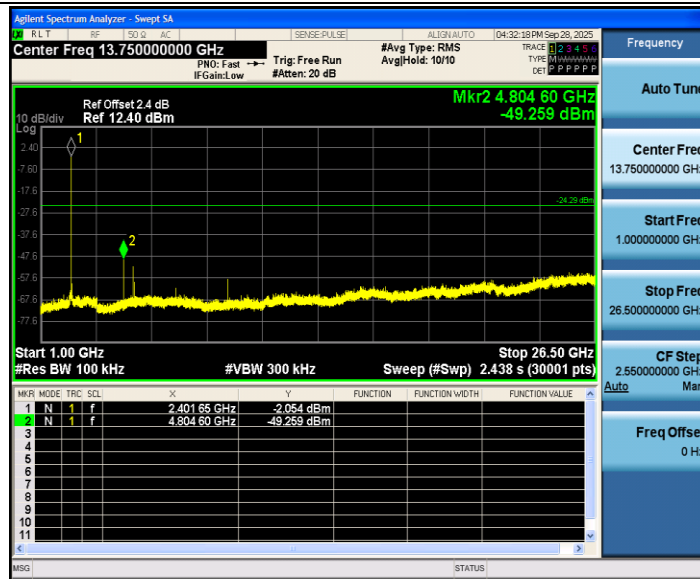
Appendix F: Conducted Spurious Emission

Test Result

TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	-4.29	-4.29	---	PASS
			30~1000	-4.29	-67.49	≤-24.29	PASS
			1000~26500	-4.29	-49.26	≤-24.29	PASS
		2440	Reference	-4.39	-4.39	---	PASS
			30~1000	-4.39	-67.14	≤-24.39	PASS
			1000~26500	-4.39	-48.51	≤-24.39	PASS
		2480	Reference	-4.40	-4.40	---	PASS
			30~1000	-4.40	-59.23	≤-24.4	PASS
			1000~26500	-4.40	-49.76	≤-24.4	PASS

Test Graphs

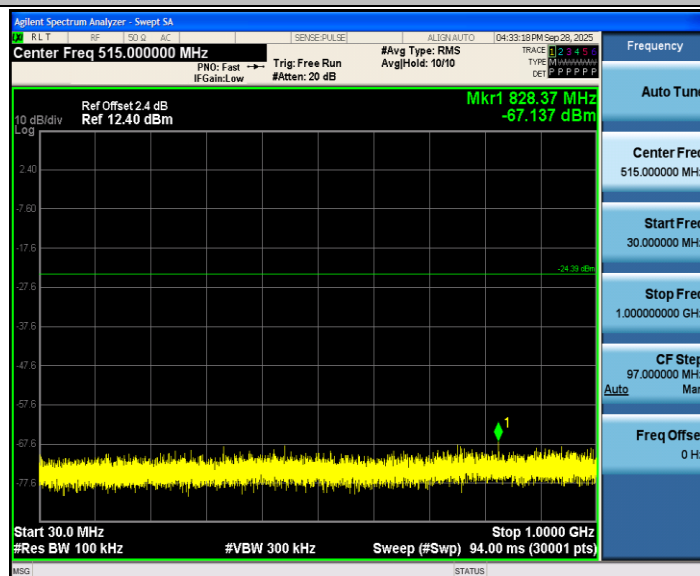




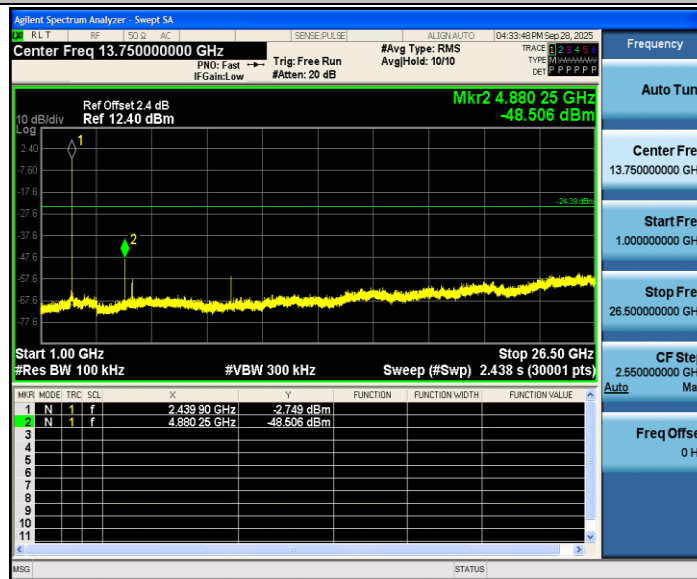
BLE_1M_Ant1_2440_0~Reference



BLE_1M_Ant1_2440_30~1000



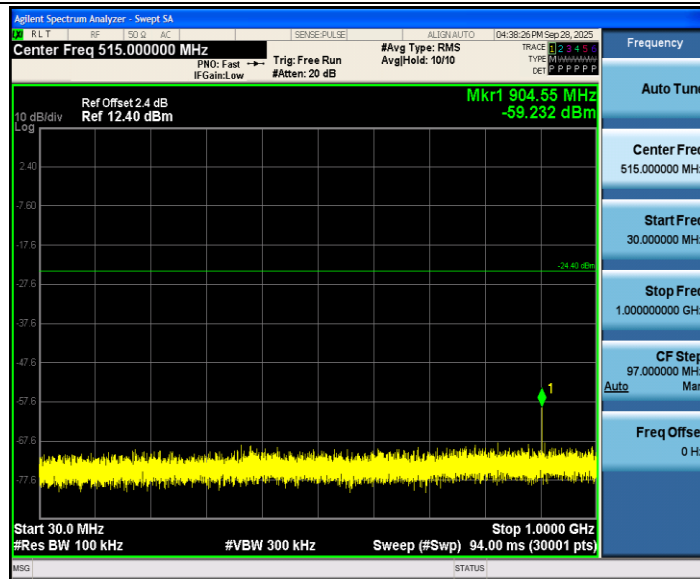
BLE_1M_Ant1_2440_1000~26500



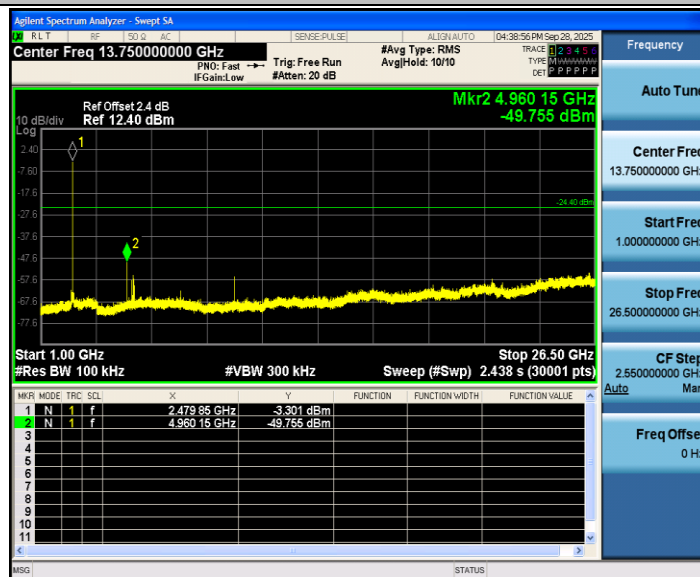
BLE_1M_Ant1_2480_0~Reference



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	0.63	0.6508	65.08	1.87	---	---
		2440	0.41	0.63	0.6508	65.08	1.87	---	---
		2480	0.41	0.63	0.6508	65.08	1.87	---	---

Test Graphs

