

Appendix: Bluetooth LE

Contents

Appendix A: DTS Bandwidth..... 3

 Test Result.....3

 Test Graphs.....4

Appendix B: Occupied Channel Bandwidth..... 7

 Test Result.....7

 Test Graphs.....8

Appendix C: Maximum conducted output power..... 11

 Test Result Peak..... 11

 Test Graphs Peak.....12

Appendix D: Maximum power spectral density..... 15

 Test Result.....15

 Test Graphs.....16

Appendix E: Band edge measurements..... 19

 Test Result.....19

 Test Graphs.....20

Appendix F: Conducted Spurious Emission..... 22

 Test Result.....22

 Test Graphs.....23

Appendix H: Duty Cycle..... 32

 Test Result.....32

 Test Graphs.....33

Appendix A: DTS Bandwidth

Test Result

Test Mode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.672	2401.700	2402.372	0.5	PASS
		2440	0.672	2439.704	2440.376	0.5	PASS
		2480	0.688	2479.696	2480.384	0.5	PASS
BLE_2M	Ant1	2402	1.164	2401.460	2402.624	0.5	PASS
		2440	1.180	2439.452	2440.632	0.5	PASS
		2480	1.176	2479.452	2480.628	0.5	PASS

Test Graphs

BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480



BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480

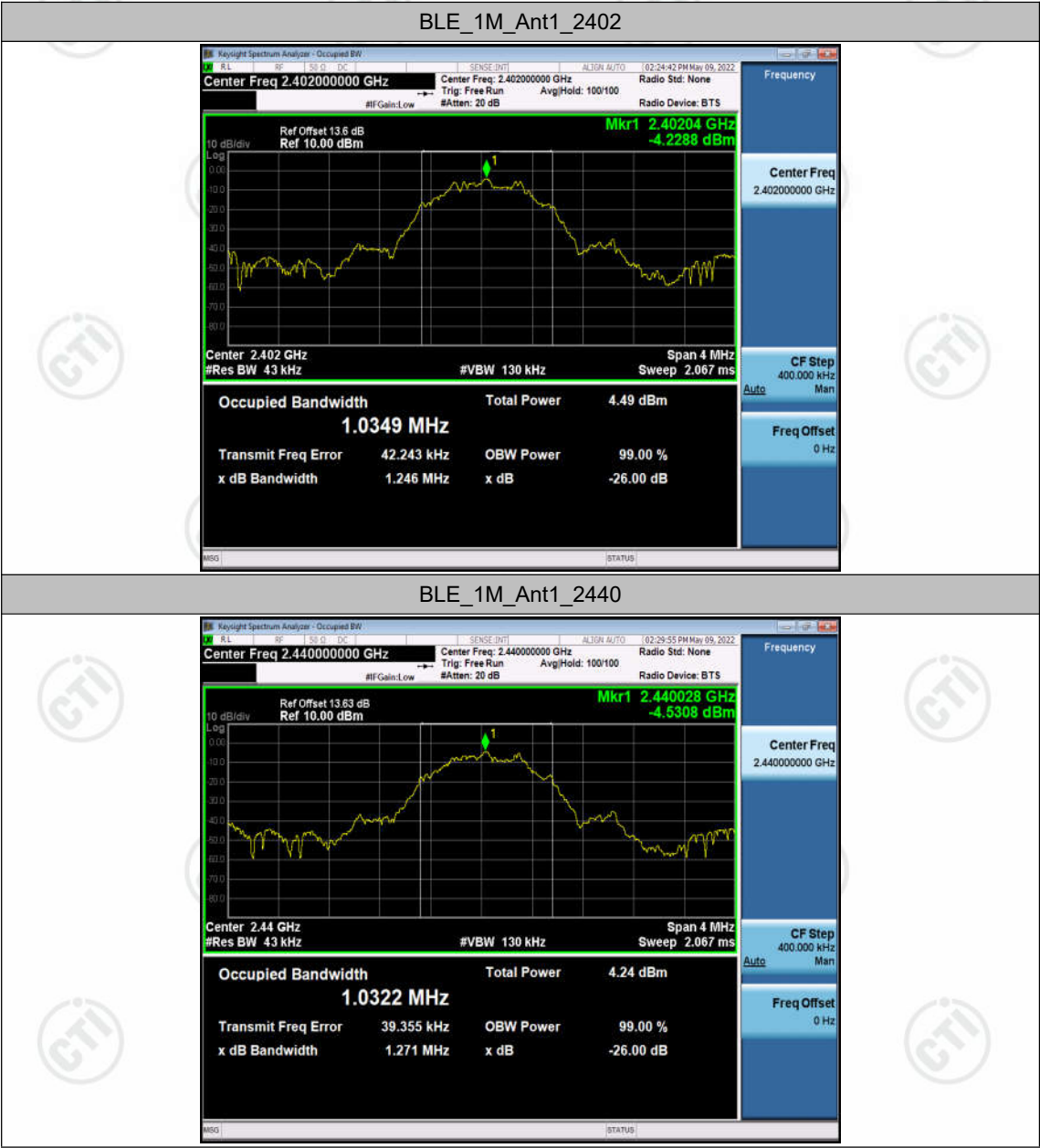


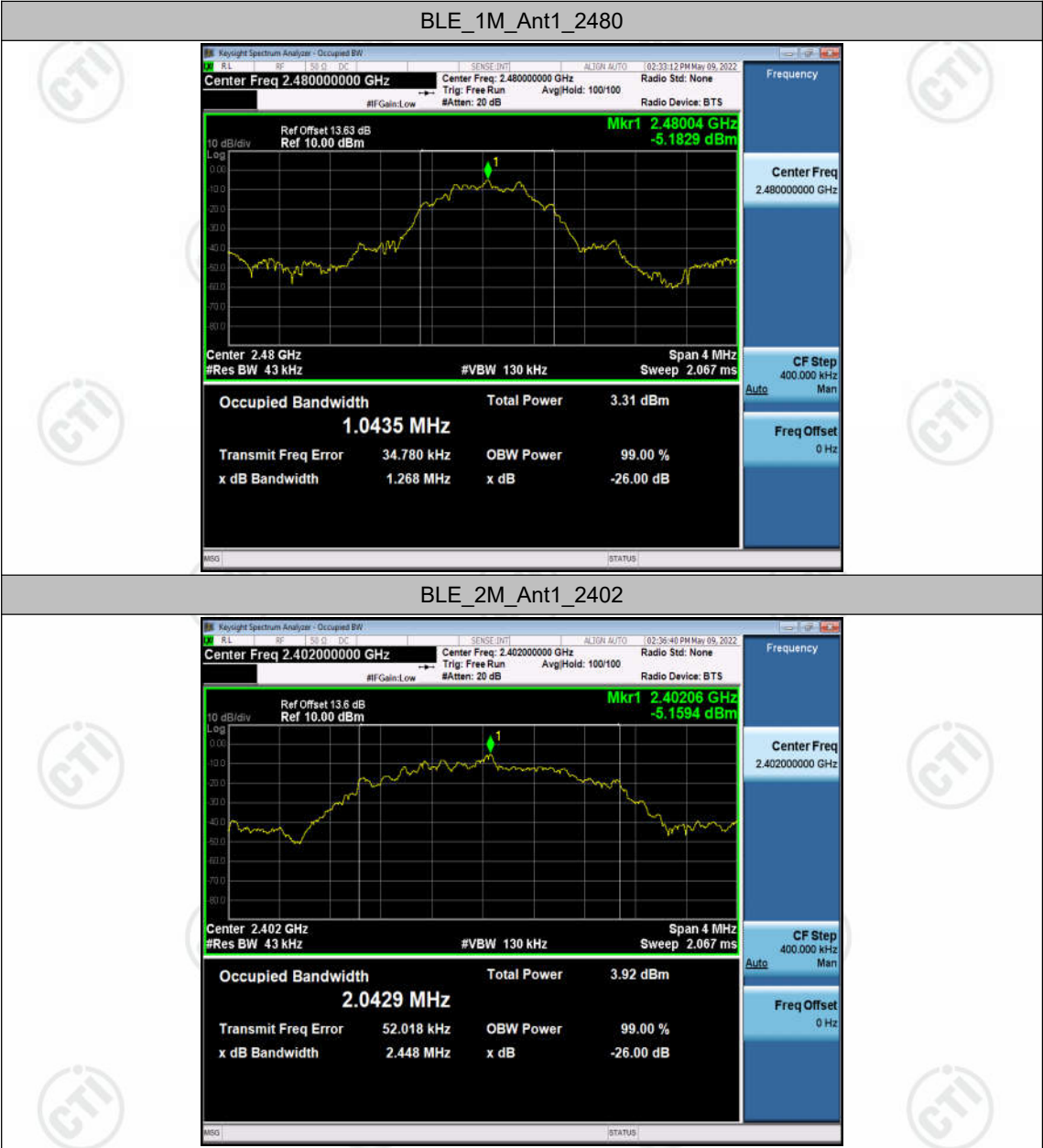
Appendix B: Occupied Channel Bandwidth

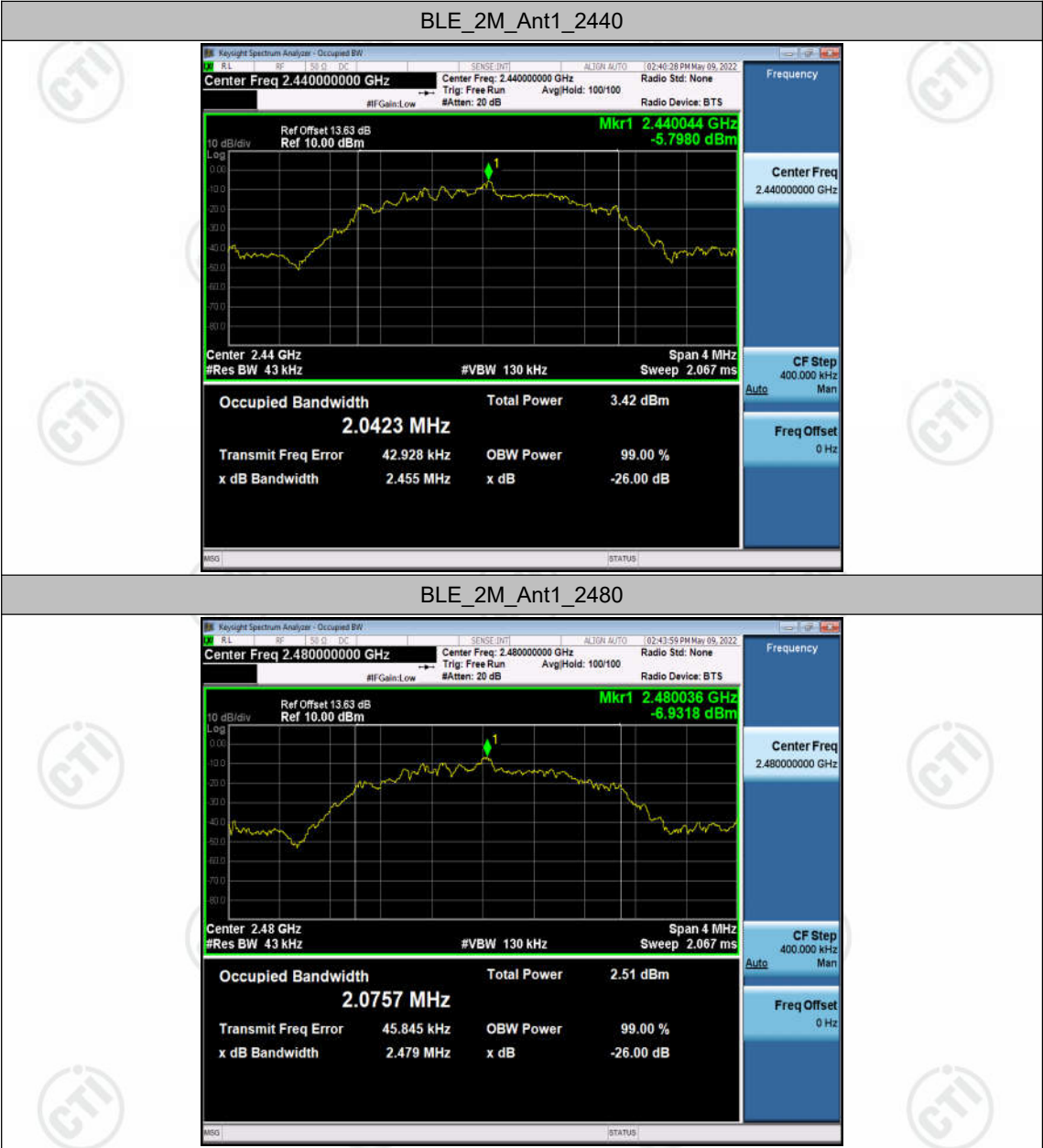
Test Result

Test Mode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0349	2401.525	2402.560	---	---
		2440	1.0322	2439.523	2440.555	---	---
		2480	1.0435	2479.513	2480.557	---	---
BLE_2M	Ant1	2402	2.0429	2401.031	2403.073	---	---
		2440	2.0423	2439.022	2441.064	---	---
		2480	2.0757	2479.008	2481.084	---	---

Test Graphs





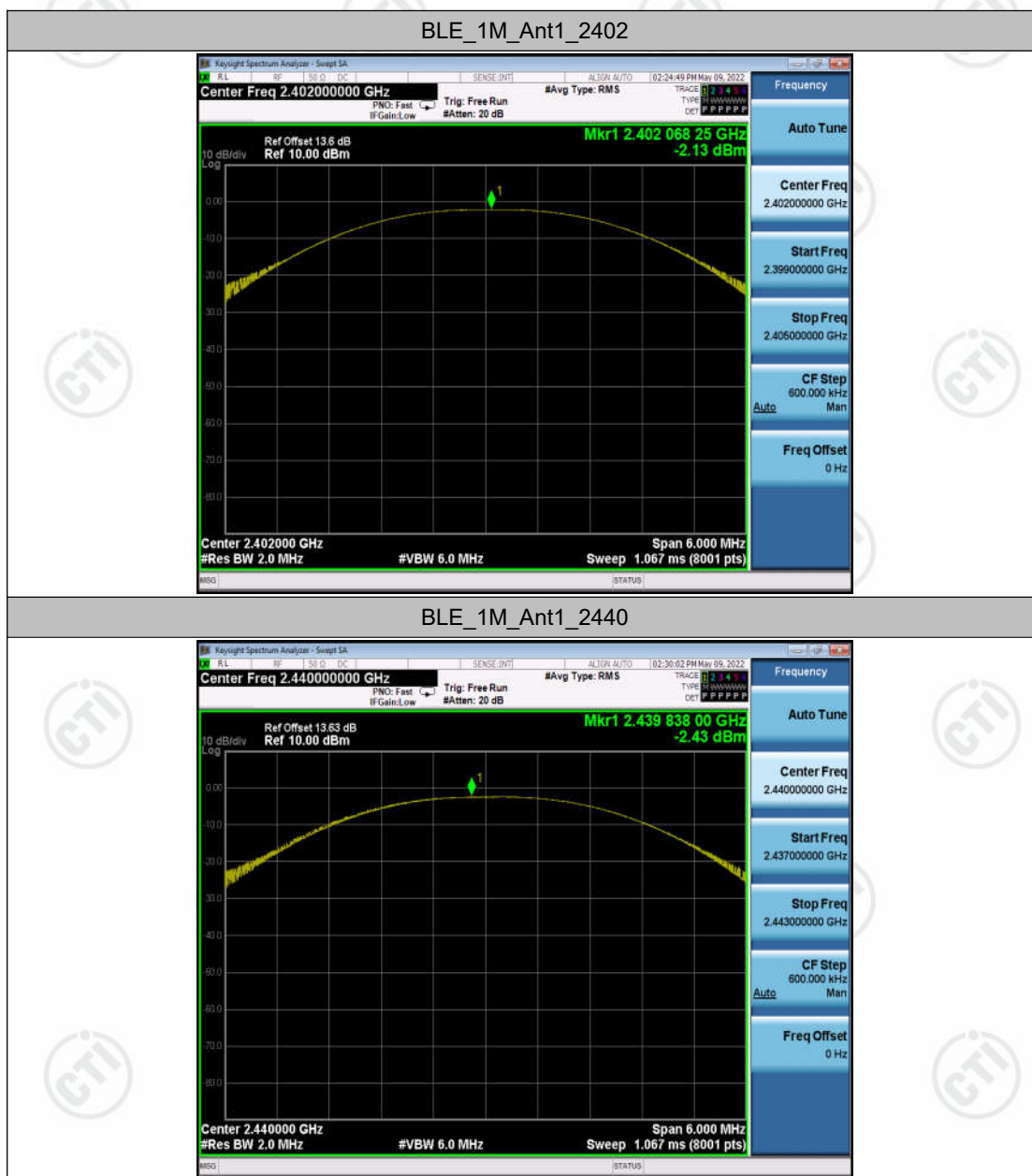


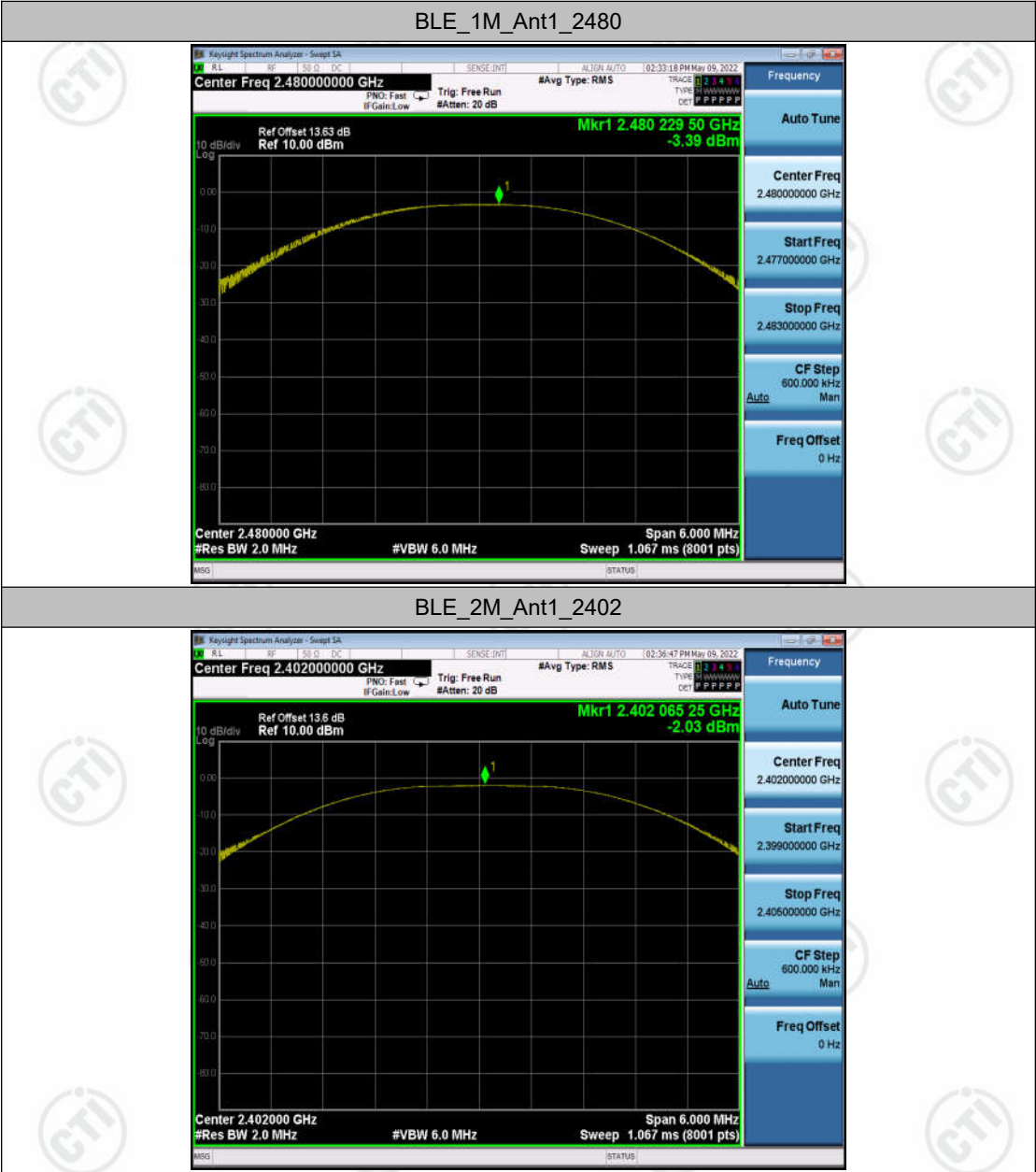
Appendix C: Maximum conducted output power

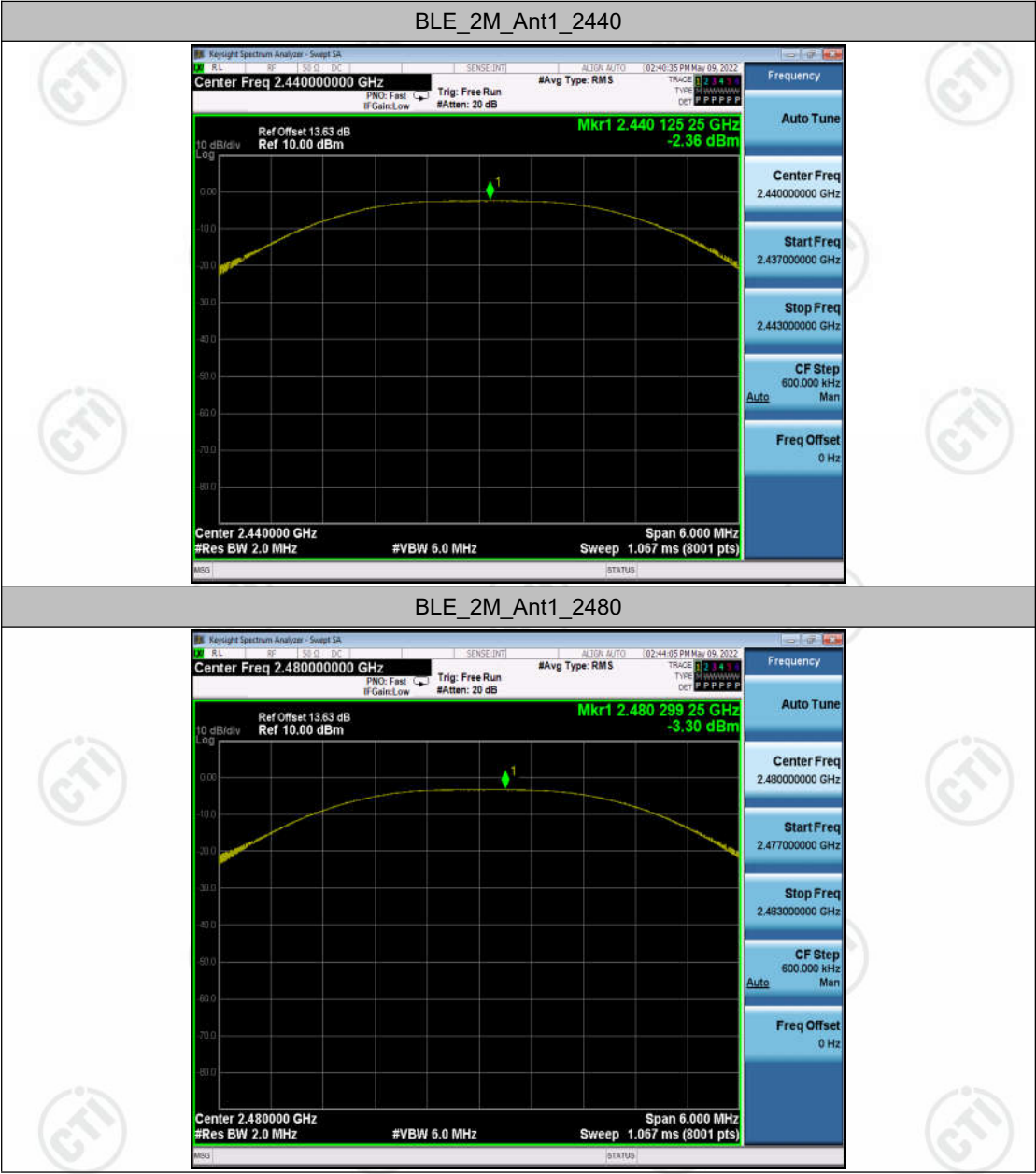
Test Result Peak

Test Mode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	-2.13	≤30	PASS
		2440	-2.43	≤30	PASS
		2480	-3.39	≤30	PASS
BLE_2M	Ant1	2402	-2.03	≤30	PASS
		2440	-2.36	≤30	PASS
		2480	-3.3	≤30	PASS

Test Graphs Peak





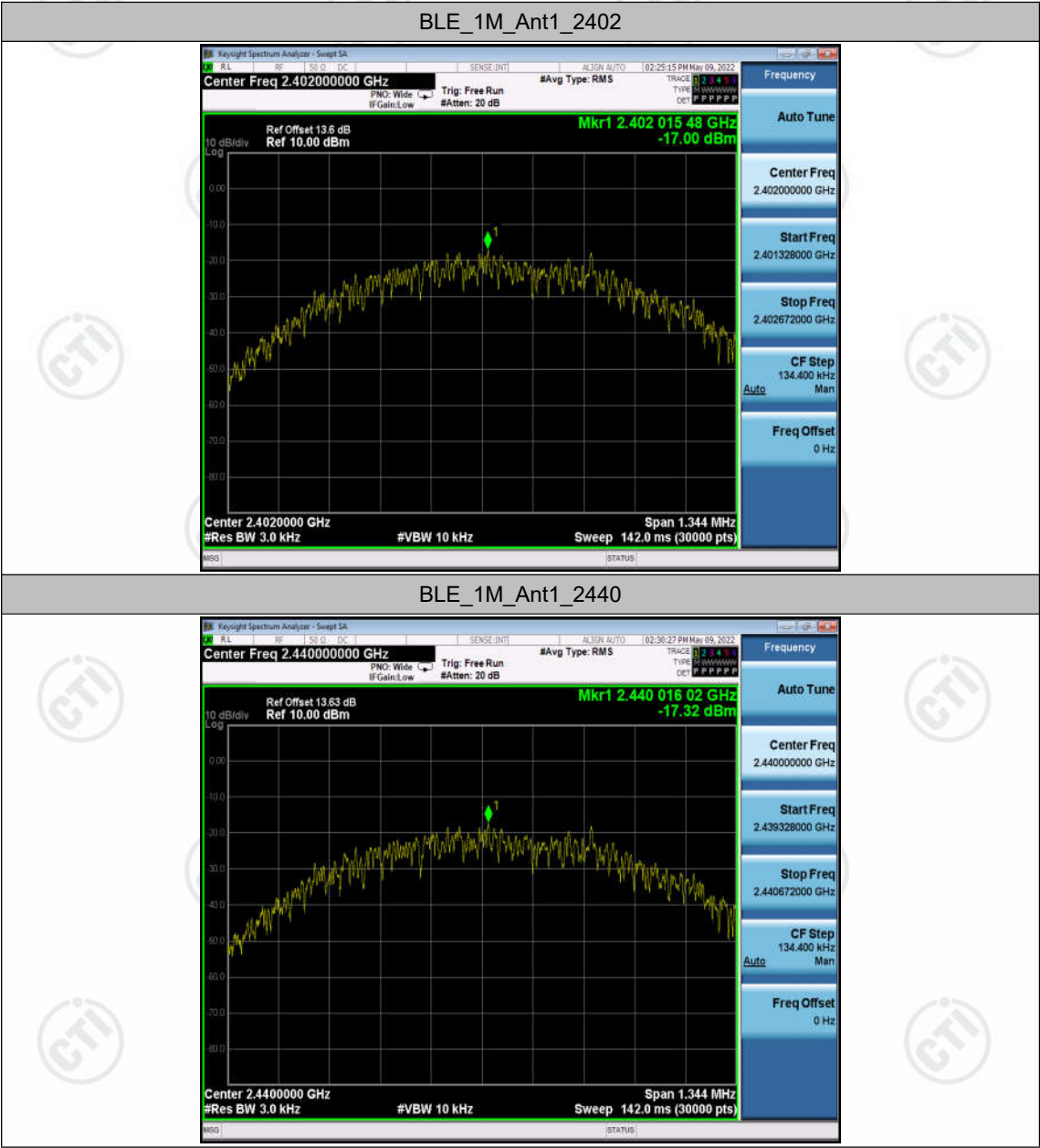


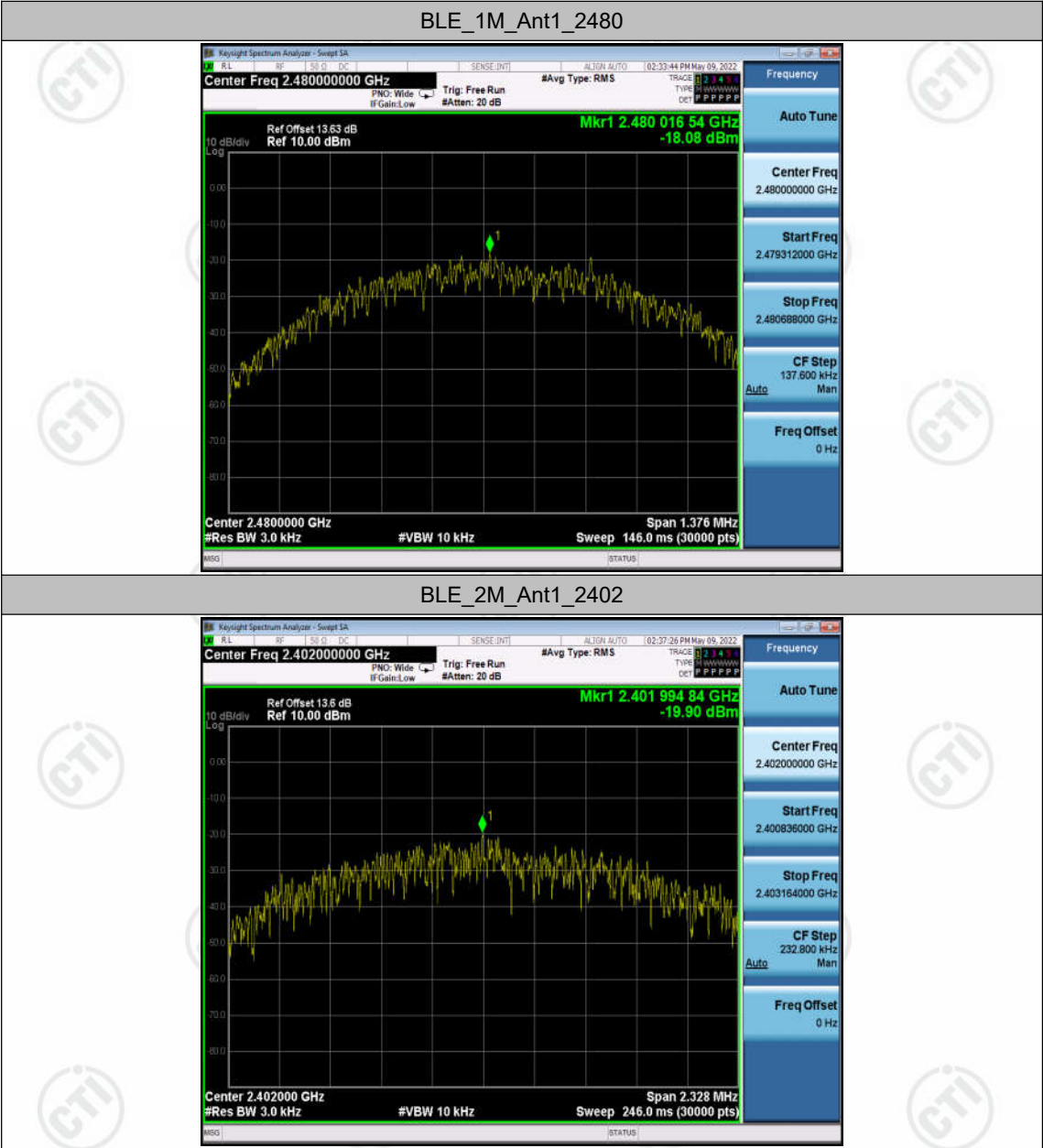
Appendix D: Maximum power spectral density

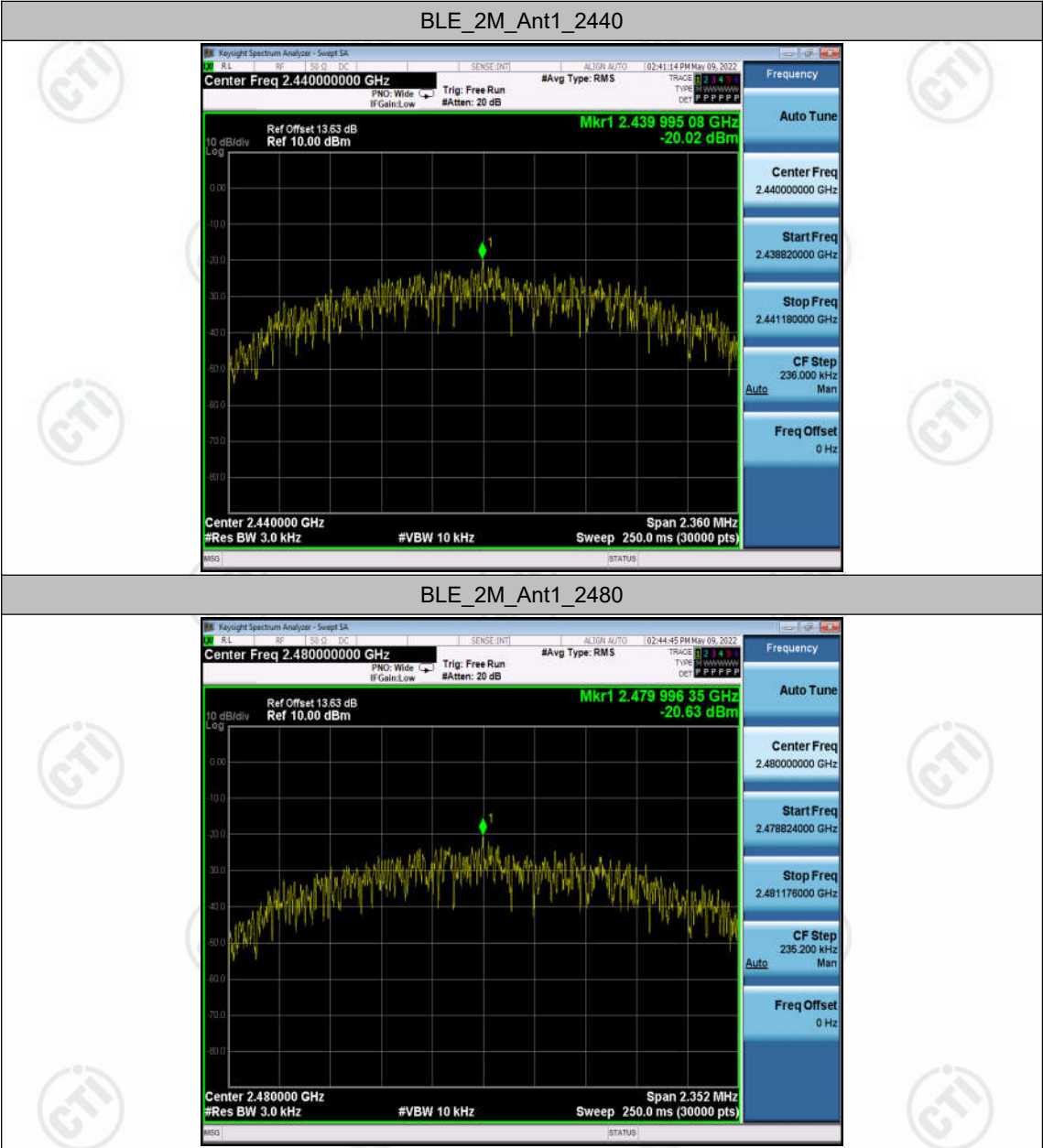
Test Result

Test Mode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-17.00	≤8.00	PASS
		2440	-17.32	≤8.00	PASS
		2480	-18.08	≤8.00	PASS
BLE_2M	Ant1	2402	-19.90	≤8.00	PASS
		2440	-20.02	≤8.00	PASS
		2480	-20.63	≤8.00	PASS

Test Graphs





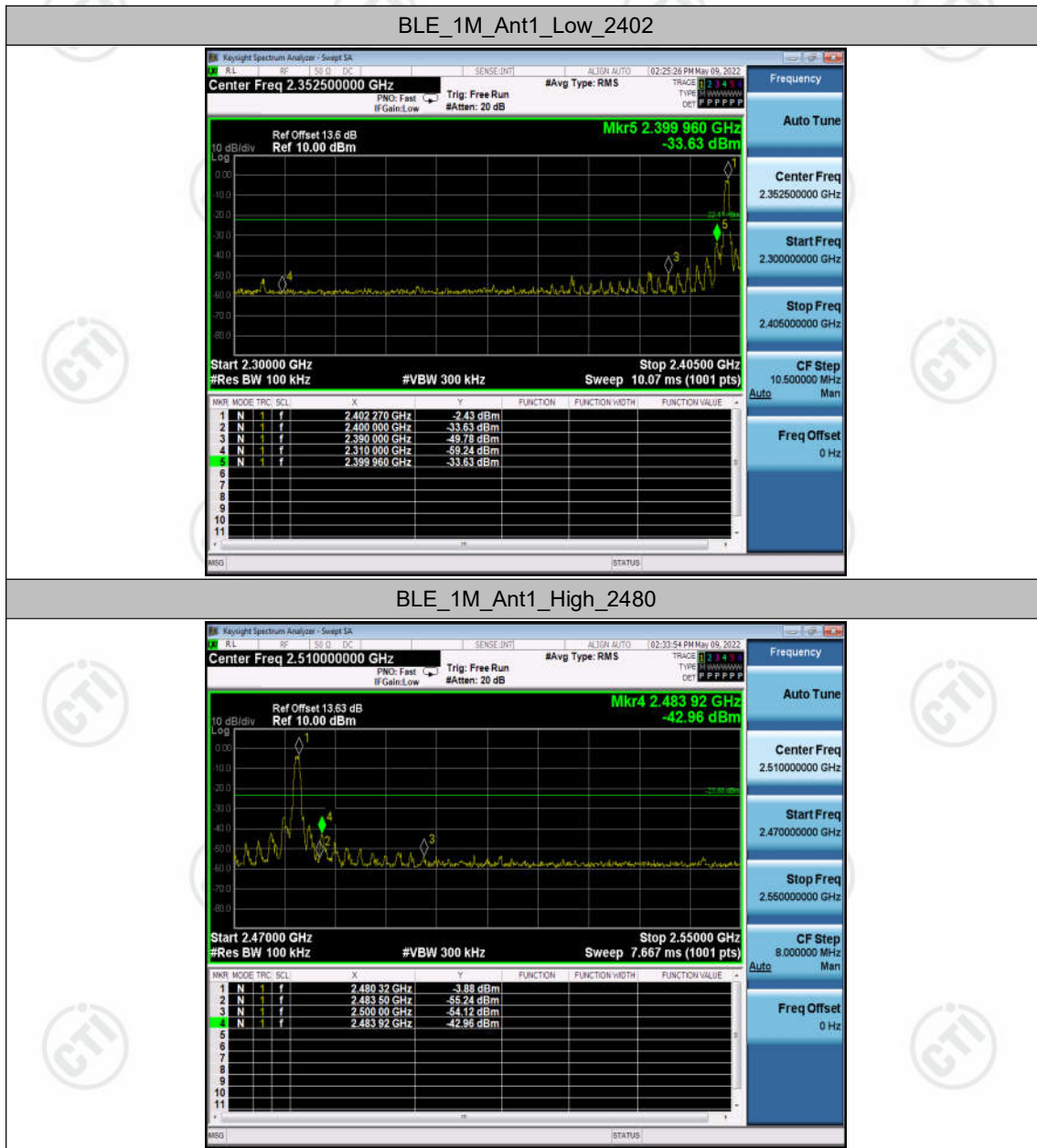


Appendix E: Band edge measurements

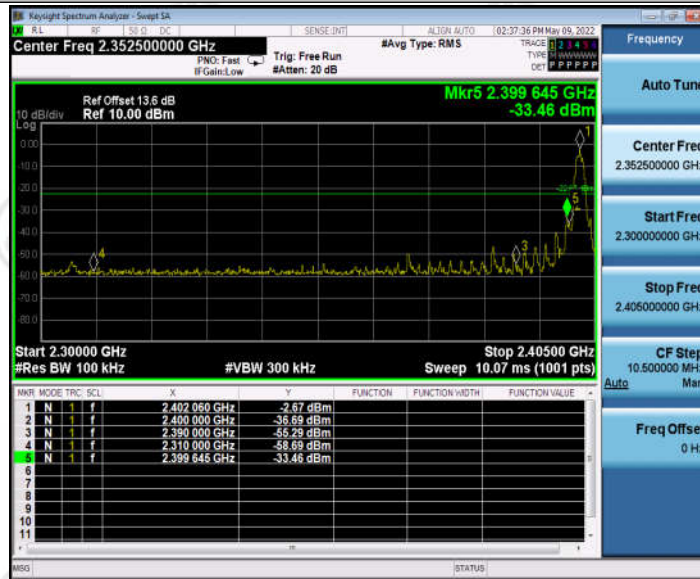
Test Result

Test Mode	Antenna	Channel	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	-2.43	-33.63	≤-22.43	PASS
		High	2480	-3.88	-42.96	≤-23.88	PASS
BLE_2M	Ant1	Low	2402	-2.67	-33.46	≤-22.67	PASS
		High	2480	-3.90	-43.17	≤-23.9	PASS

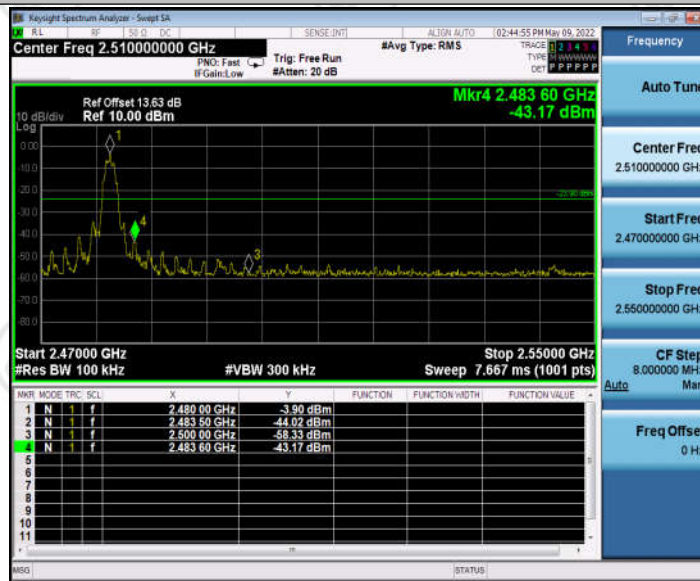
Test Graphs



BLE_2M_Ant1_Low_2402



BLE_2M_Ant1_High_2480

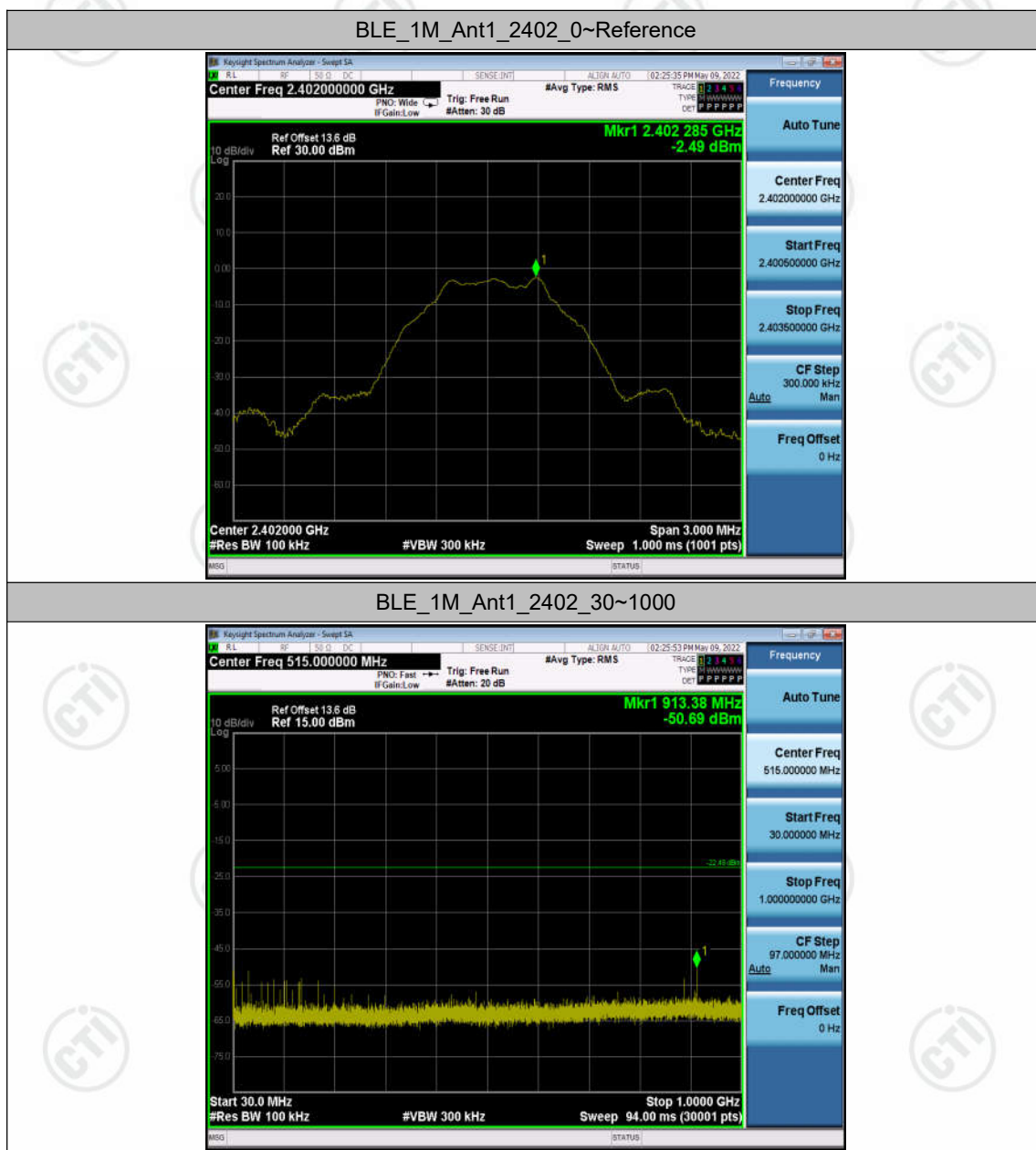


Appendix F: Conducted Spurious Emission

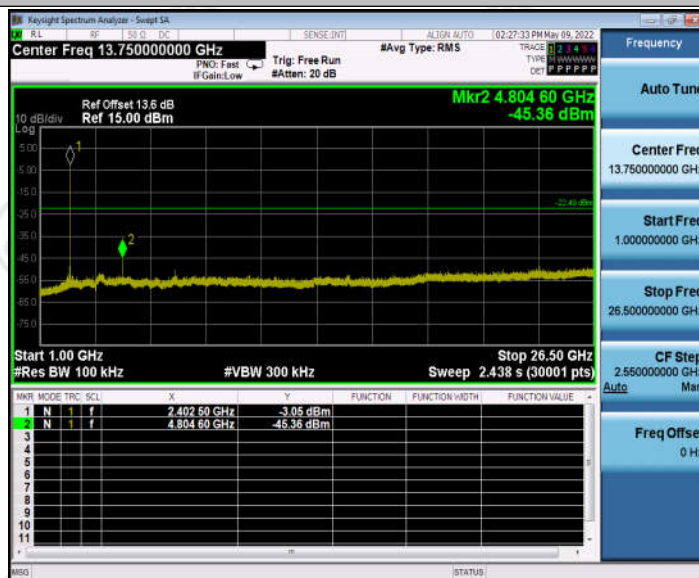
Test Result

Test Mode	Antenna	Frequency [MHz]	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	-2.49	-2.49	---	PASS
			30~1000	---	-50.69	≤-22.49	PASS
			1000~26500	---	-45.36	≤-22.49	PASS
		2440	Reference	-2.83	-2.83	---	PASS
			30~1000	---	-50.02	≤-22.83	PASS
			1000~26500	---	-45.18	≤-22.83	PASS
		2480	Reference	-3.82	-3.82	---	PASS
			30~1000	---	-50.55	≤-23.82	PASS
			1000~26500	---	-45.62	≤-23.82	PASS
BLE_2M	Ant1	2402	Reference	-2.72	-2.72	---	PASS
			30~1000	---	-50.83	≤-22.72	PASS
			1000~26500	---	-48.1	≤-22.72	PASS
		2440	Reference	-3.00	-3.00	---	PASS
			30~1000	---	-49.89	≤-23	PASS
			1000~26500	---	-46.58	≤-23	PASS
		2480	Reference	-3.84	-3.84	---	PASS
			30~1000	---	-50.29	≤-23.84	PASS
			1000~26500	---	-46.83	≤-23.84	PASS

Test Graphs

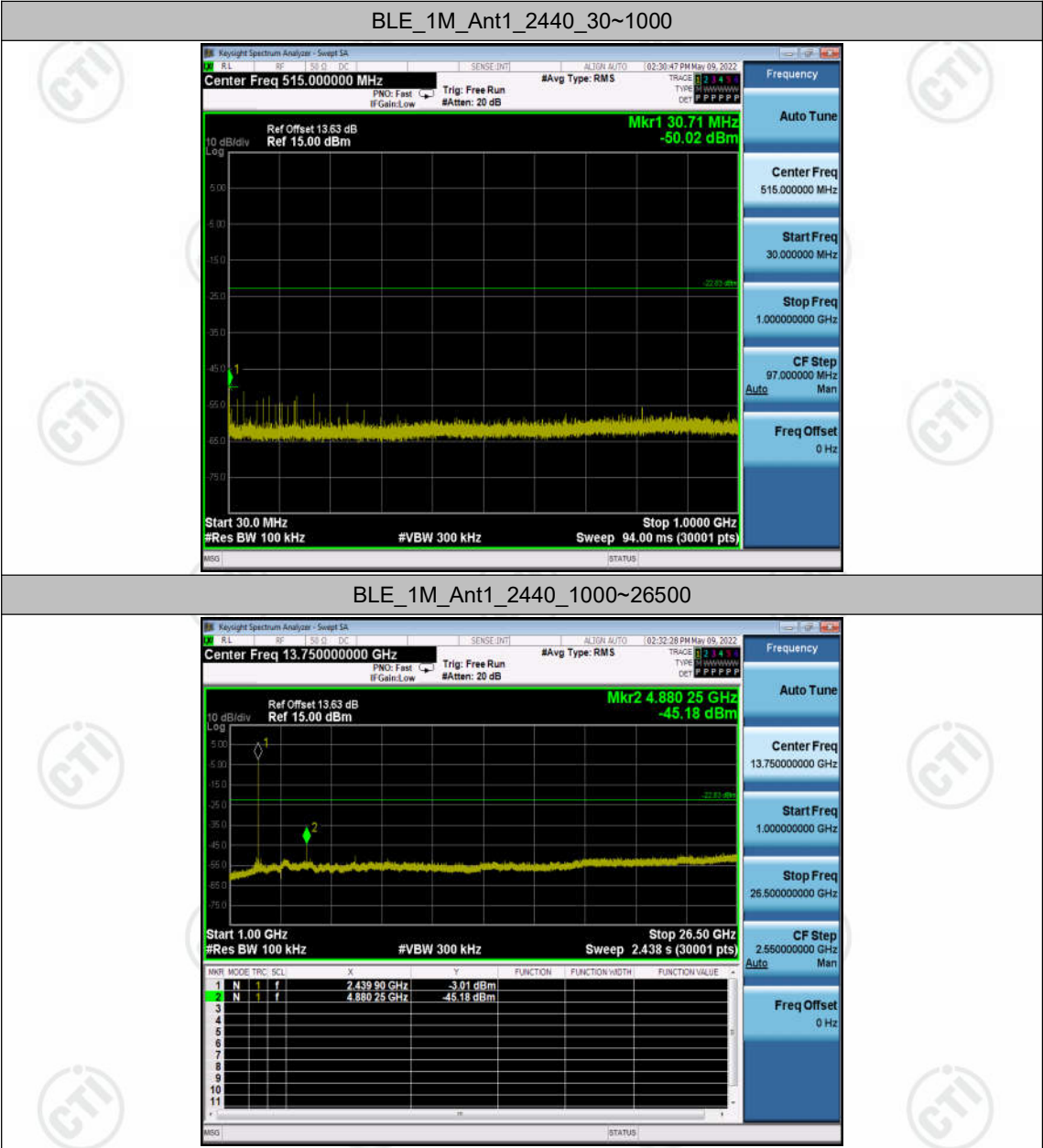


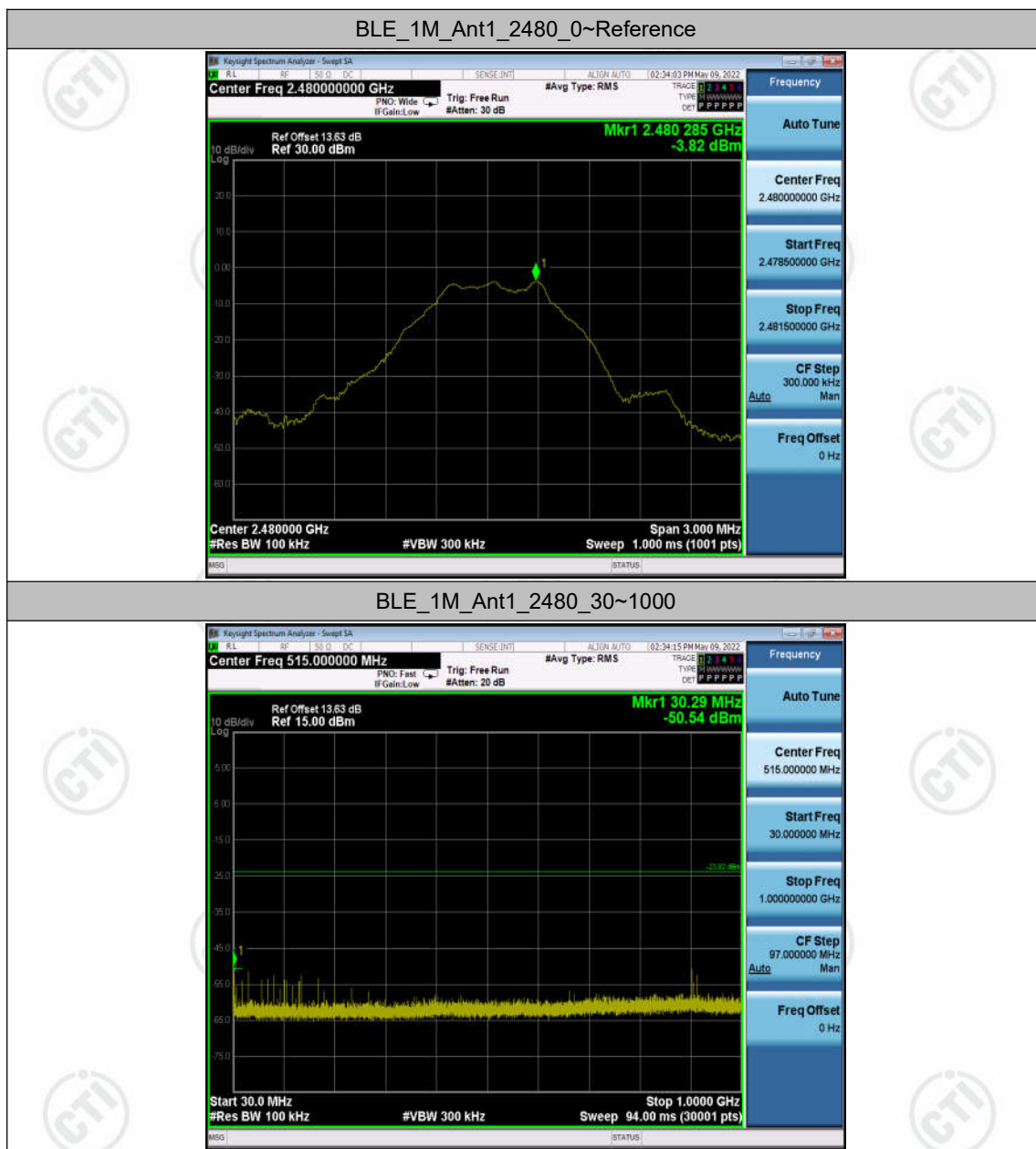
BLE_1M_Ant1_2402_1000~26500

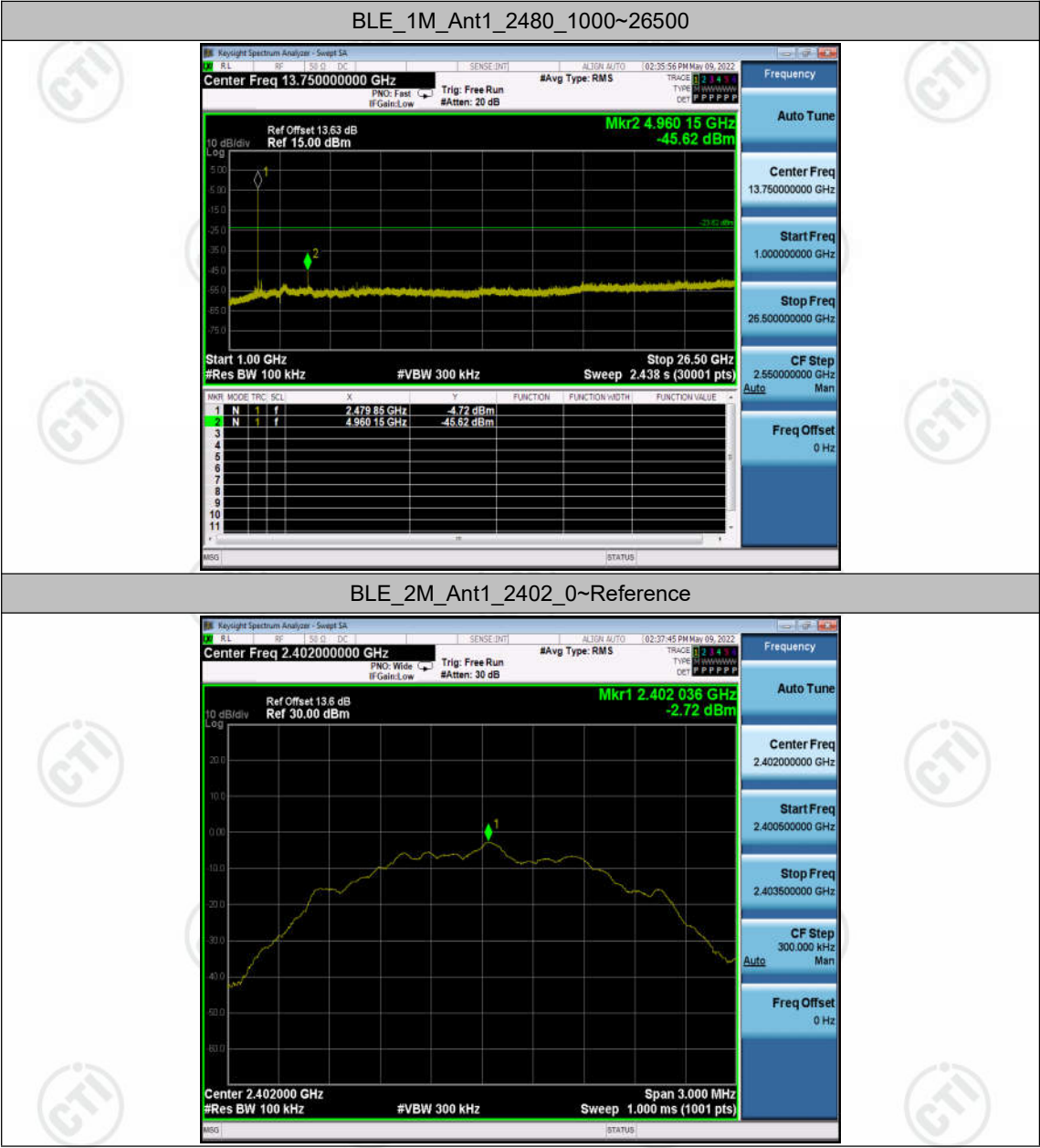


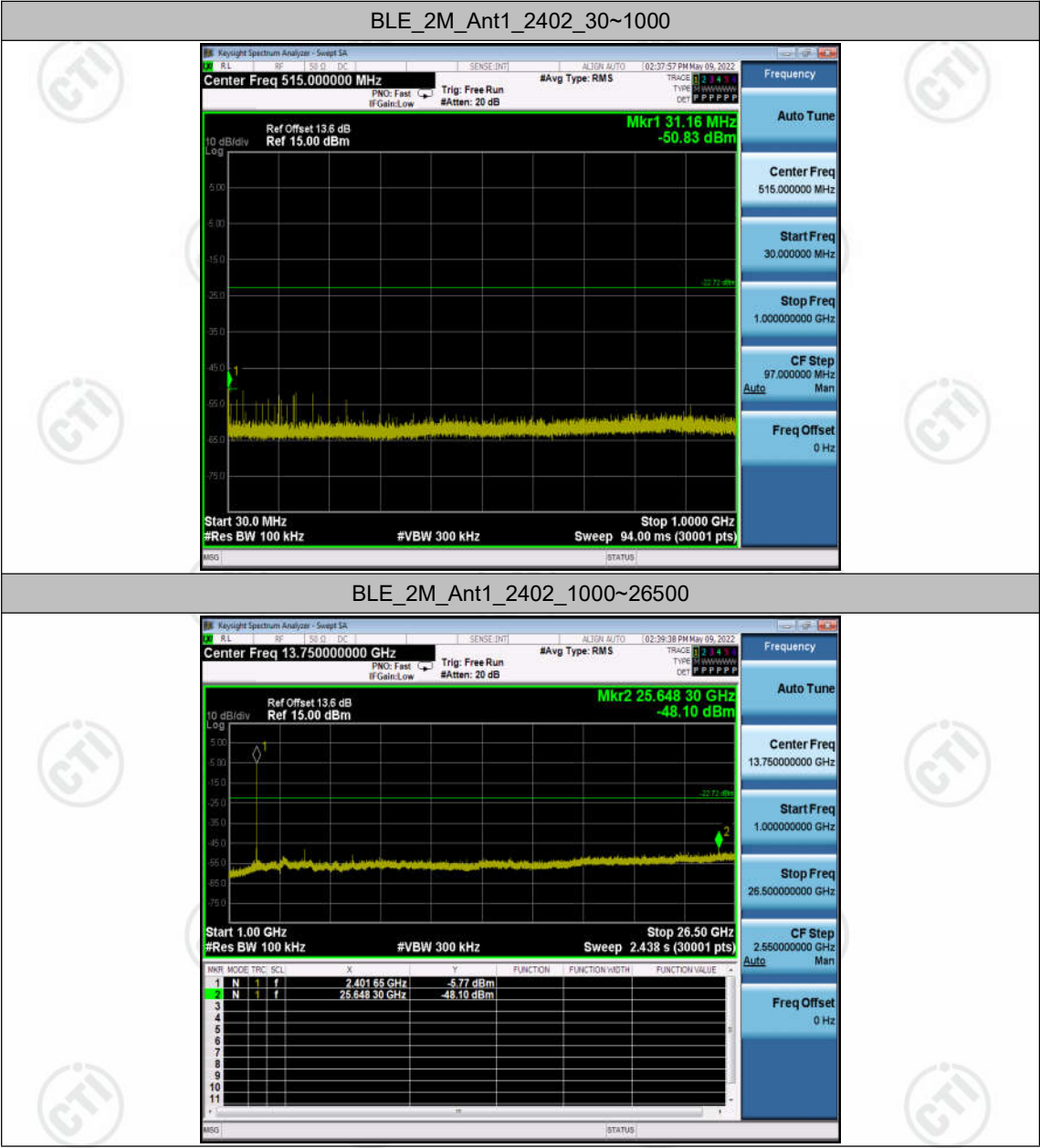
BLE_1M_Ant1_2440_0~Reference

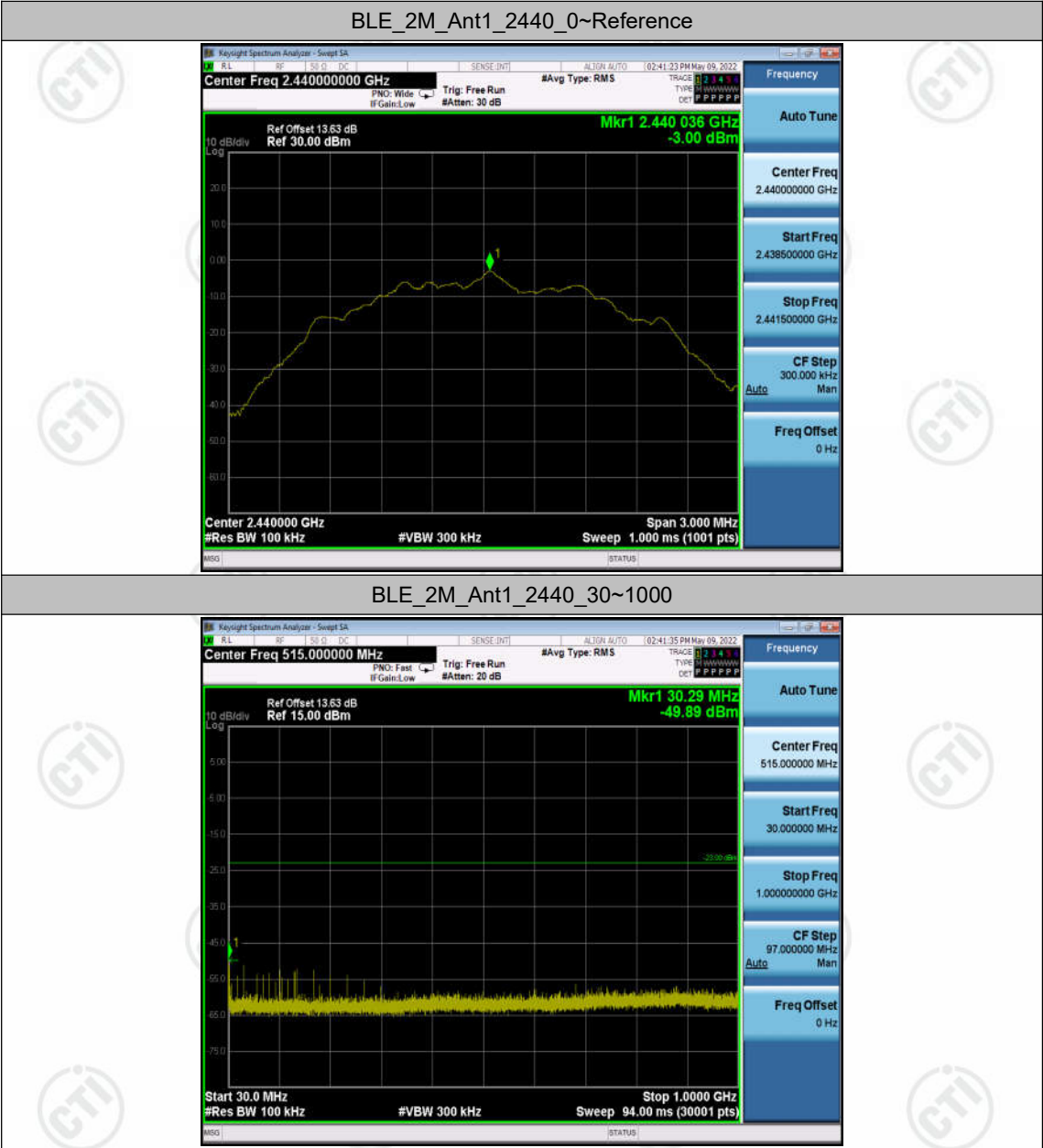




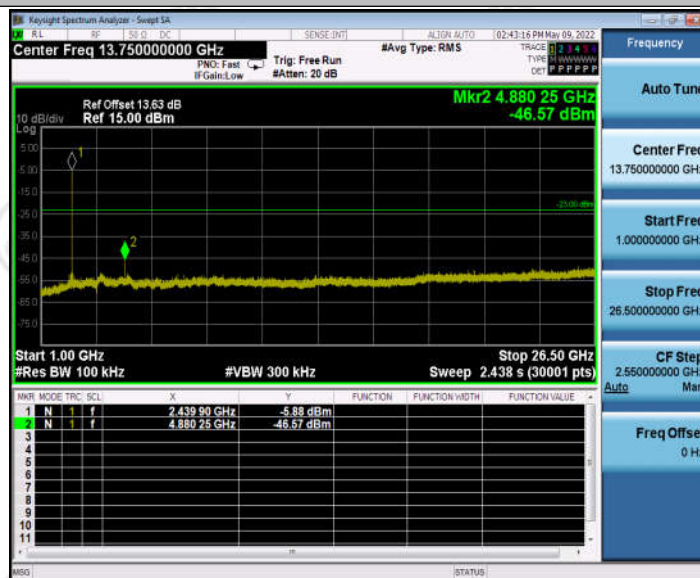






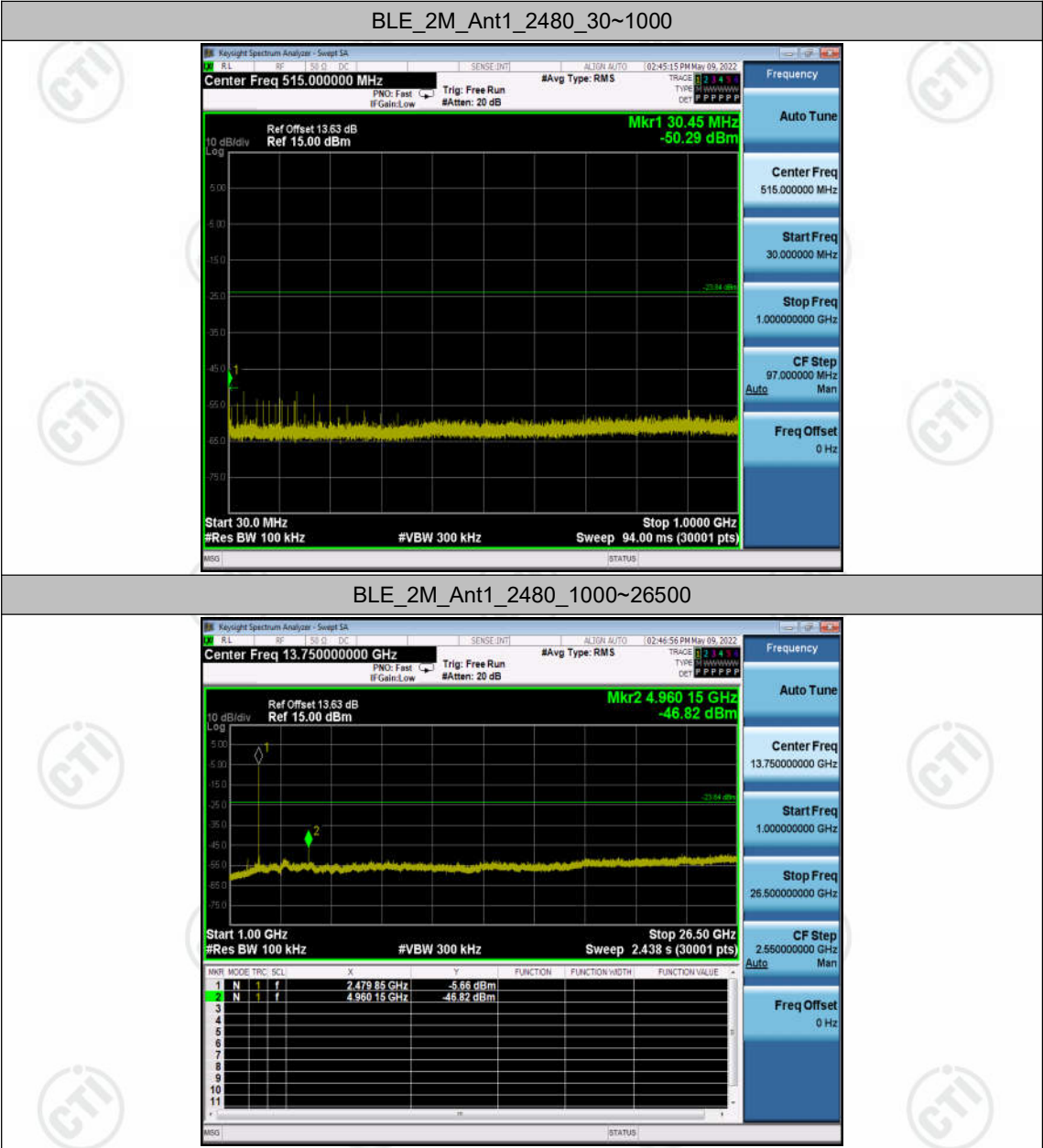


BLE_2M_Ant1_2440_1000~26500



BLE_2M_Ant1_2480_0~Reference



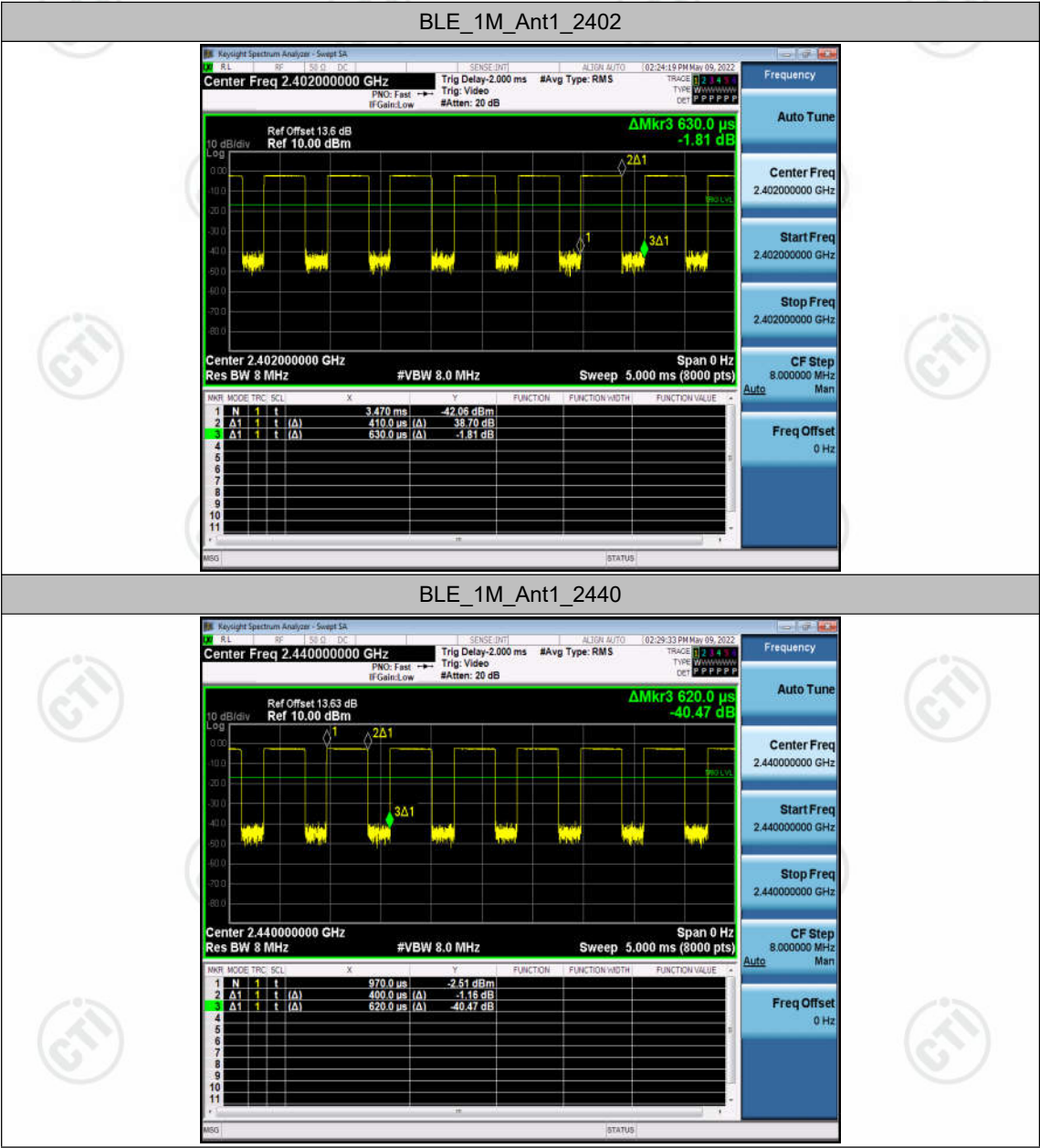


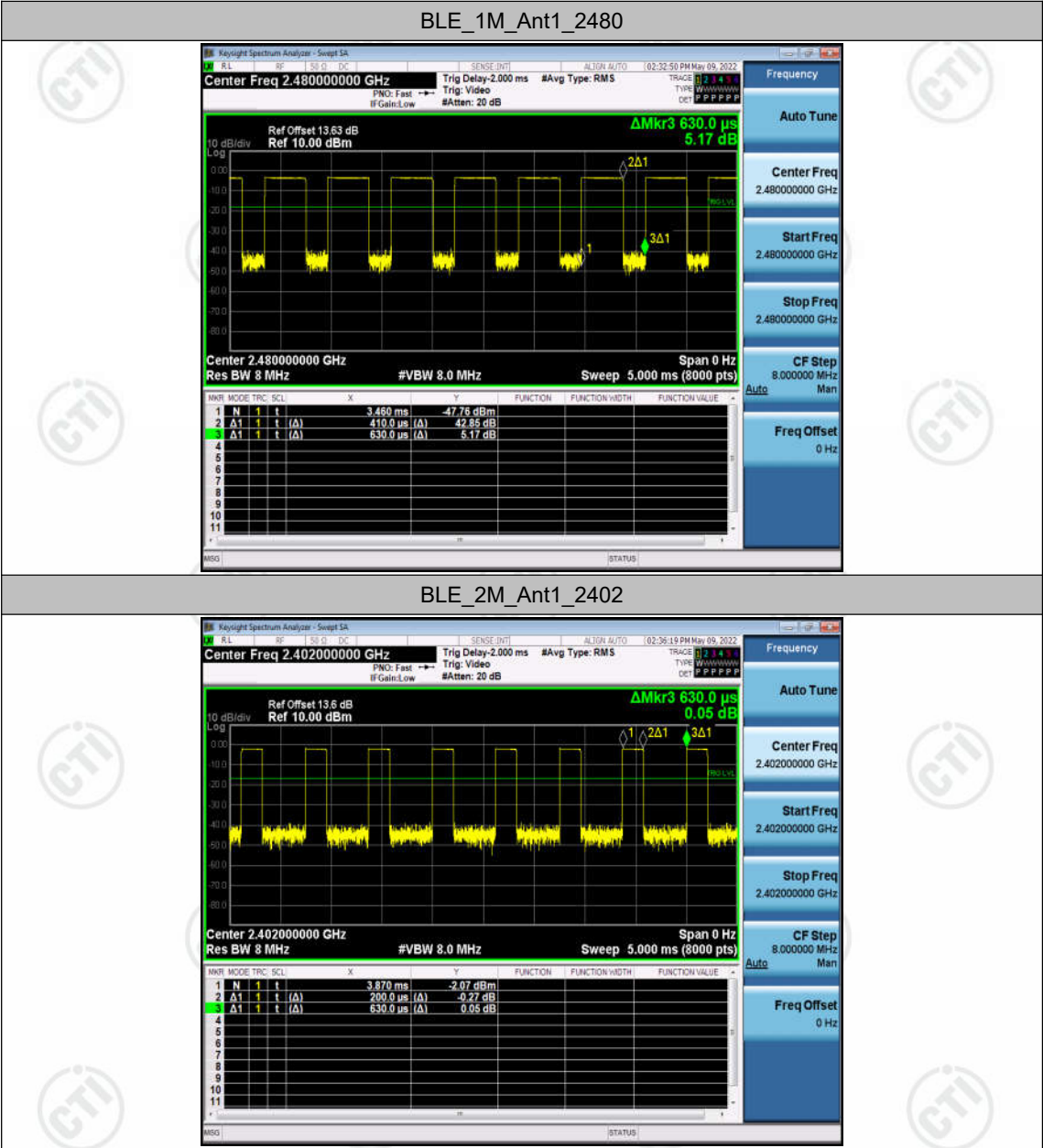
Appendix H: Duty Cycle

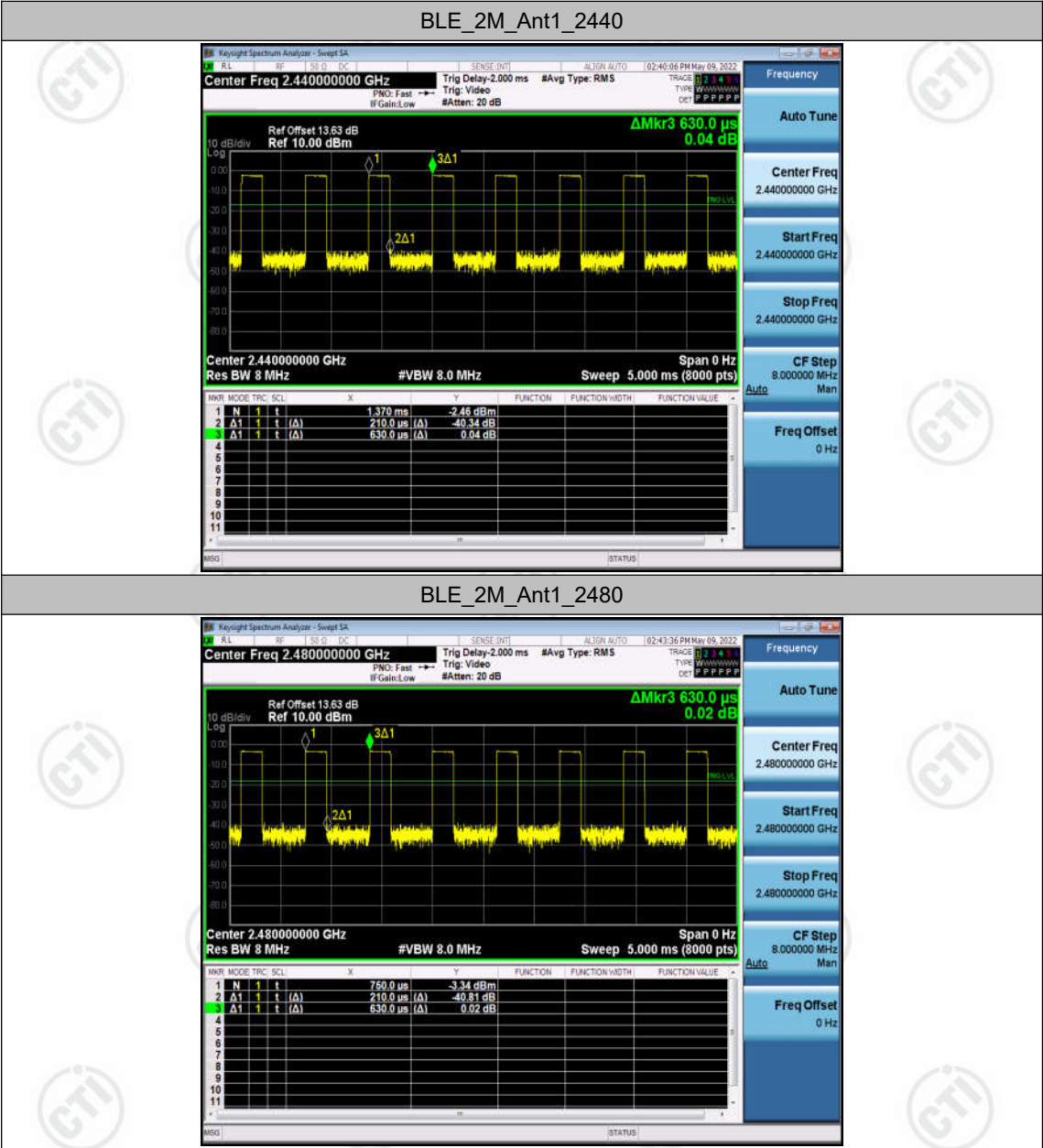
Test Result

Test Mode	Antenna	Frequency[MHz]	ON Time [ms]	Period [ms]	Duty Cycle [%]	Duty Cycle Factor[dB]
BLE_1M	Ant1	2402	0.41	0.63	65.08	1.87
		2440	0.40	0.62	64.52	1.90
		2480	0.41	0.63	65.08	1.87
BLE_2M	Ant1	2402	0.20	0.63	31.75	4.98
		2440	0.21	0.63	33.33	4.77
		2480	0.21	0.63	33.33	4.77

Test Graphs







*** End of Report ***