

Appendix: Bluetooth LE

Conents

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 11

 Test Graphs 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 G: Duty Cycle 32

 Test Result 32

 Test Graphs 33

Appendix A: DTS Bandwidth

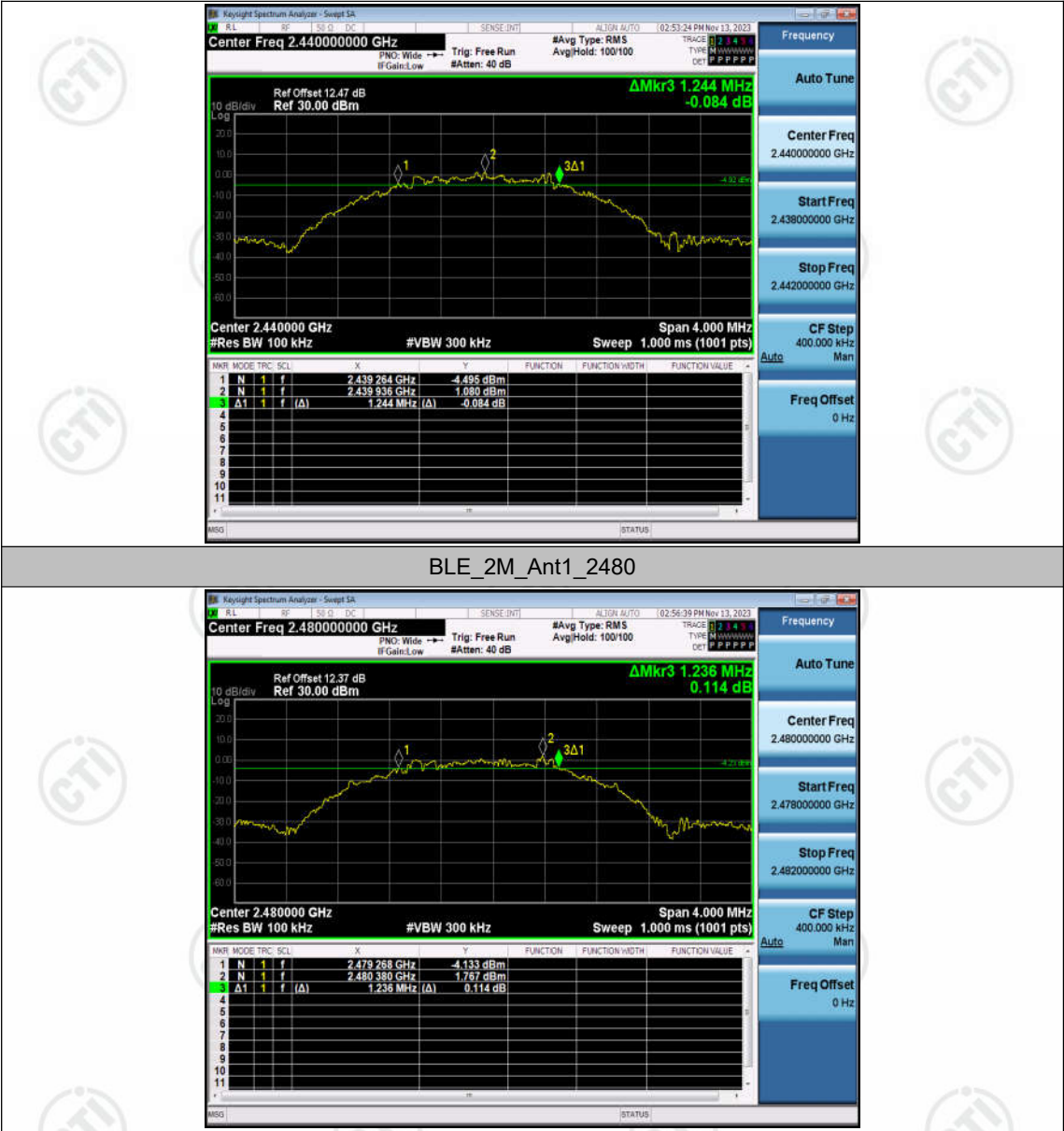
Test Result

Test Mode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.668	2401.572	2402.240	0.5	PASS
		2440	0.708	2439.552	2440.260	0.5	PASS
		2480	0.692	2479.560	2480.252	0.5	PASS
BLE_2M	Ant1	2402	1.248	2401.244	2402.492	0.5	PASS
		2440	1.244	2439.264	2440.508	0.5	PASS
		2480	1.236	2479.268	2480.504	0.5	PASS

Test Graphs





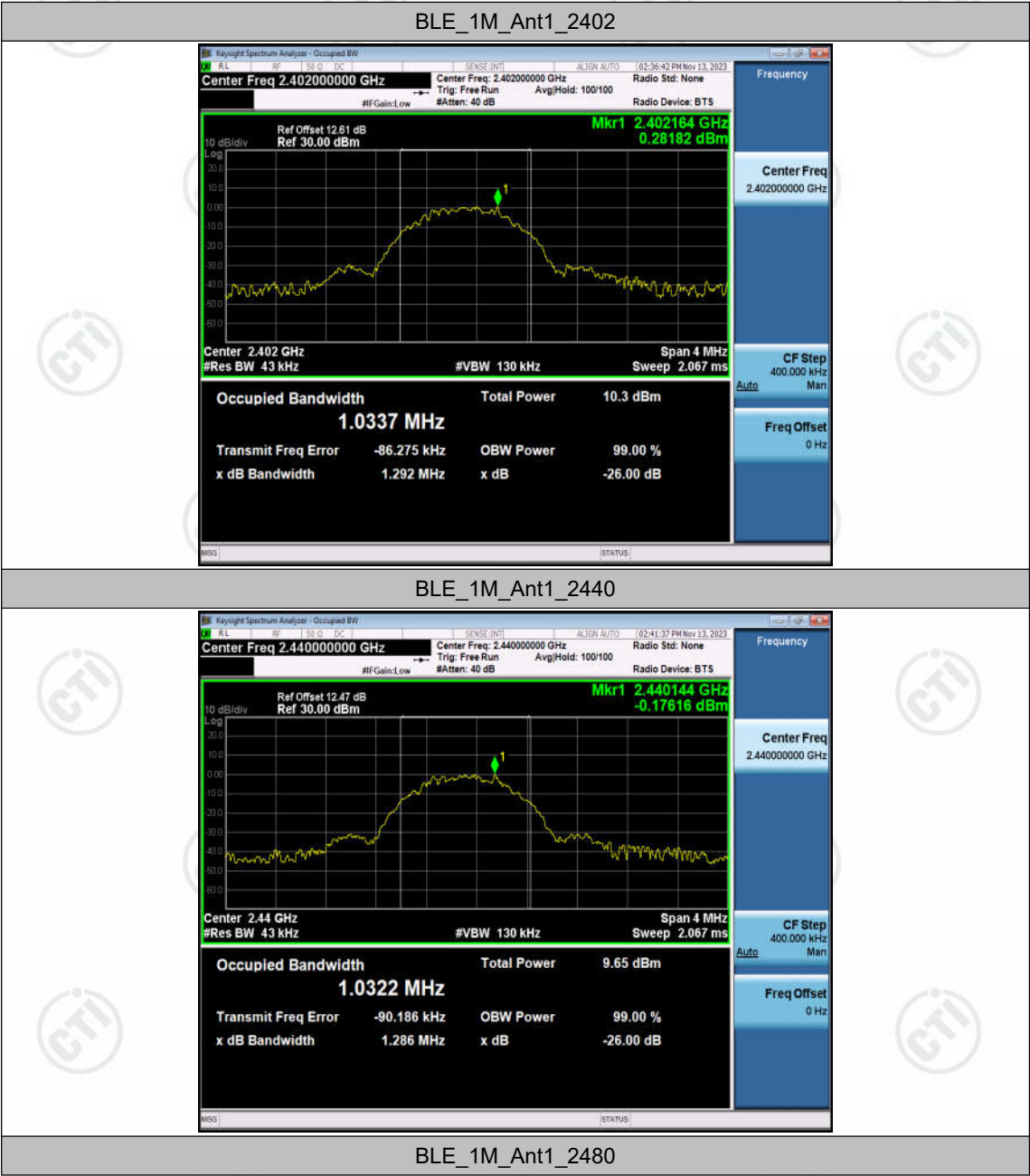


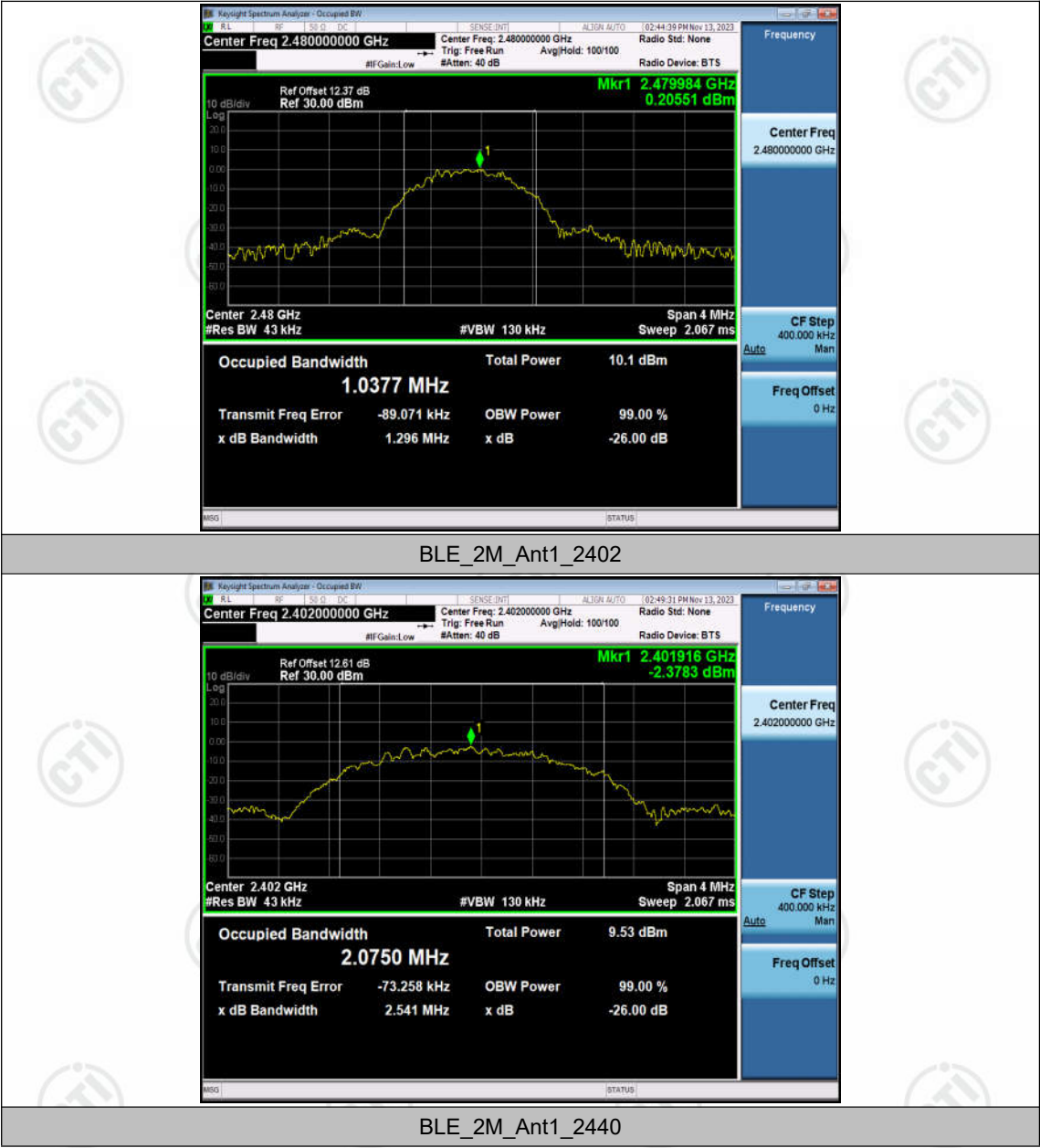
Appendix B: Occupied Channel Bandwidth

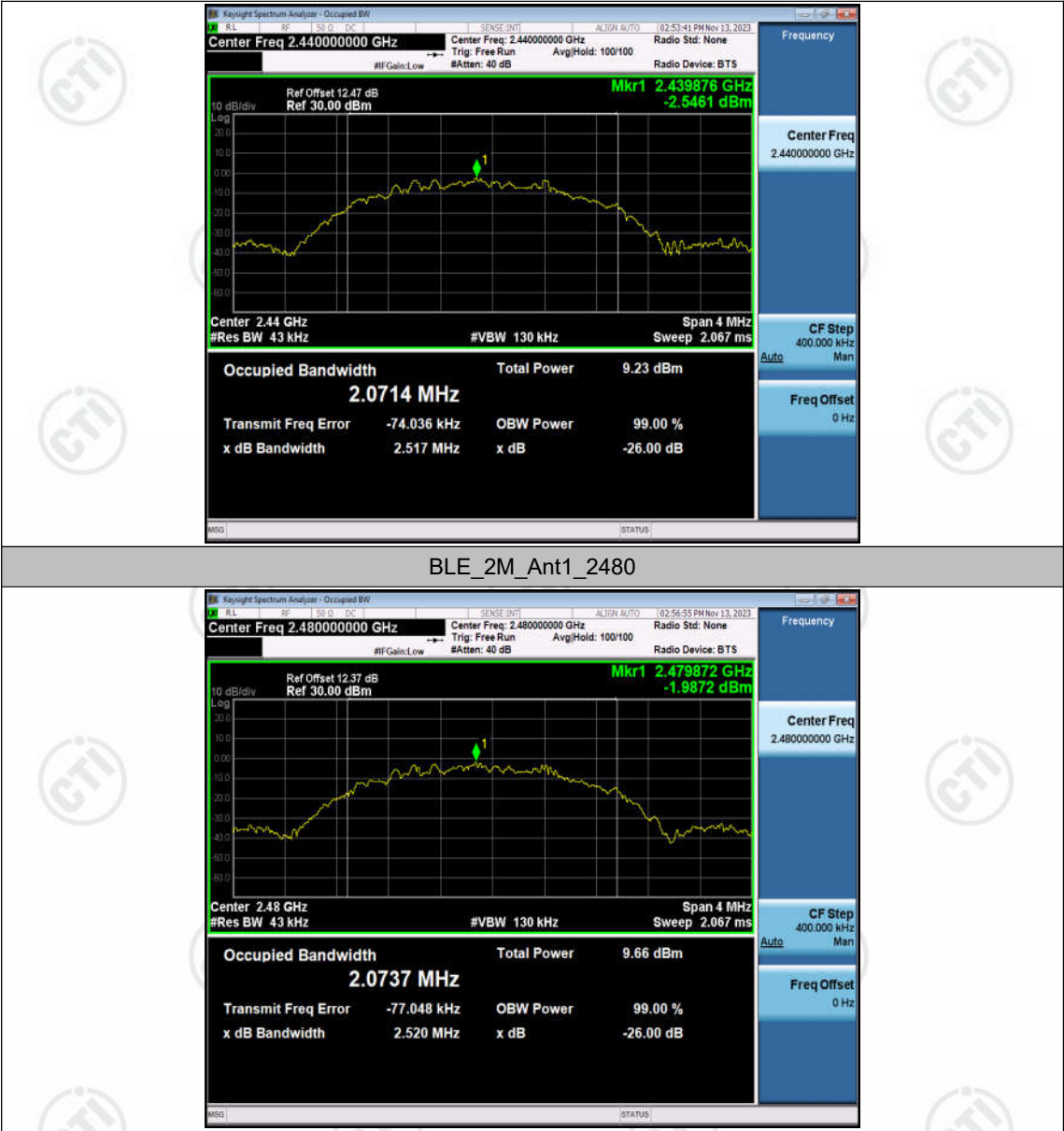
Test Result

Test Mode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0337	2401.3969	2402.4306	---	---
		2440	1.0322	2439.3937	2440.4259	---	---
		2480	1.0377	2479.3921	2480.4298	---	---
BLE_2M	Ant1	2402	2.0750	2400.8892	2402.9642	---	---
		2440	2.0714	2438.8903	2440.9617	---	---
		2480	2.0737	2478.8861	2480.9598	---	---

Test Graphs







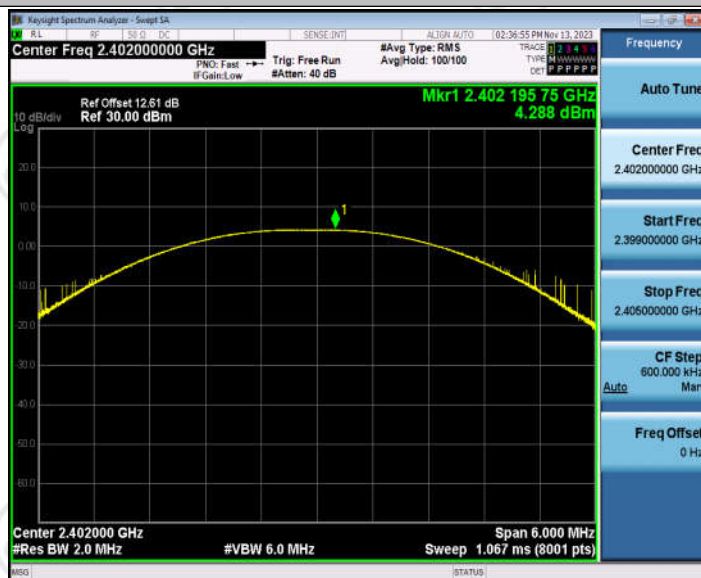
Appendix C: Maximum conducted output power

Test Result

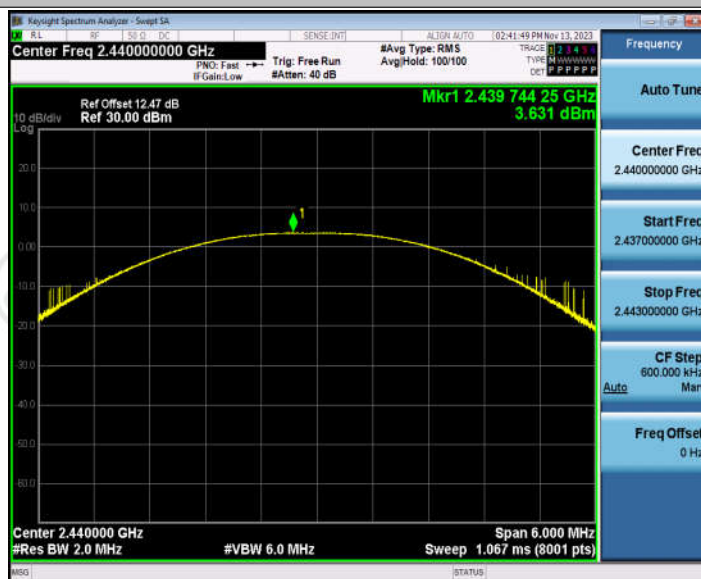
Test Mode	Antenna	Frequency[MHz]	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
BLE_1M	Ant1	2402	4.29	≤30	PASS
		2440	3.63	≤30	PASS
		2480	4.17	≤30	PASS
BLE_2M	Ant1	2402	4.17	≤30	PASS
		2440	3.6	≤30	PASS
		2480	4.15	≤30	PASS

Test Graphs

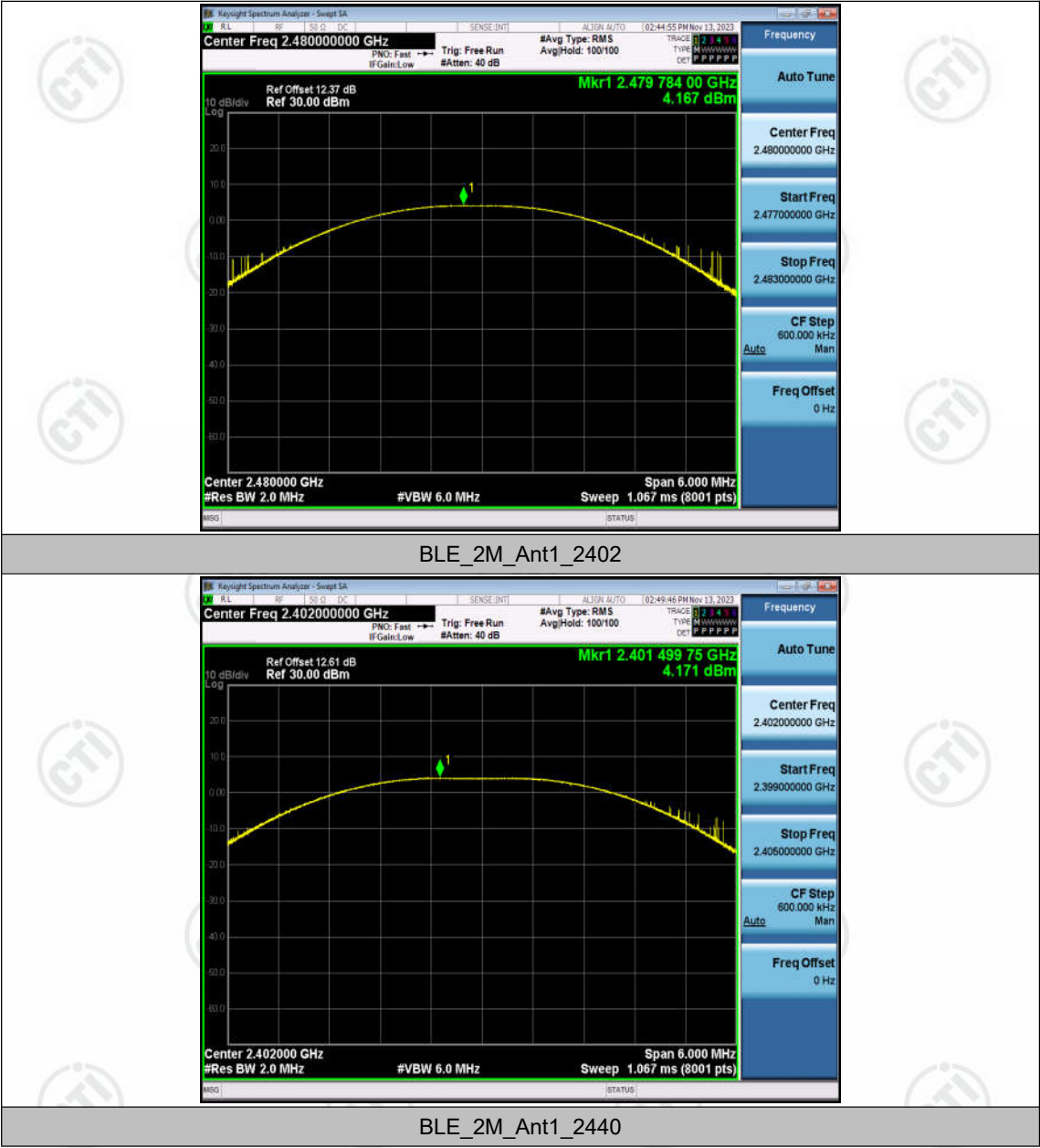
BLE_1M_Ant1_2402

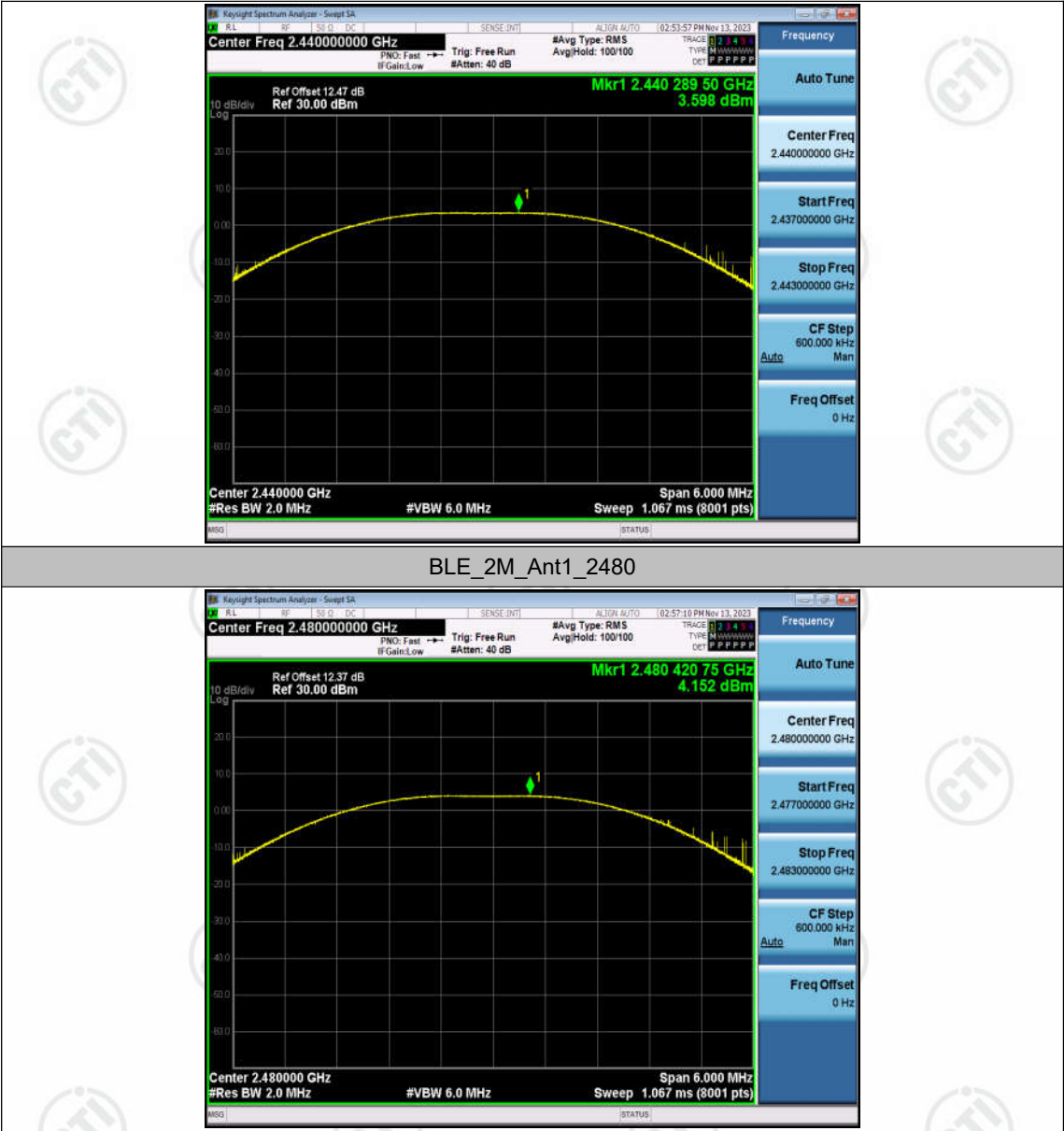


BLE_1M_Ant1_2440



BLE_1M_Ant1_2480



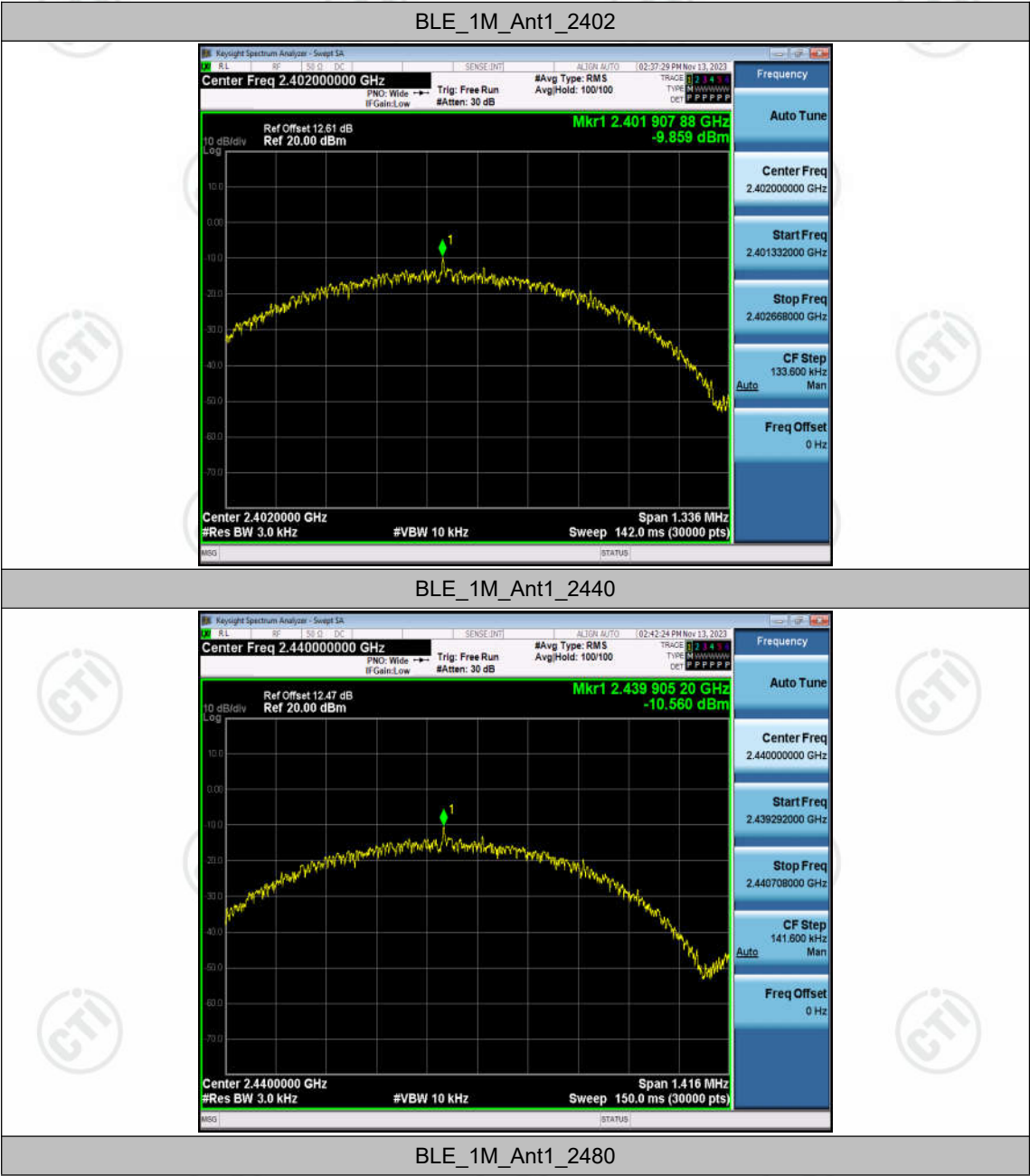


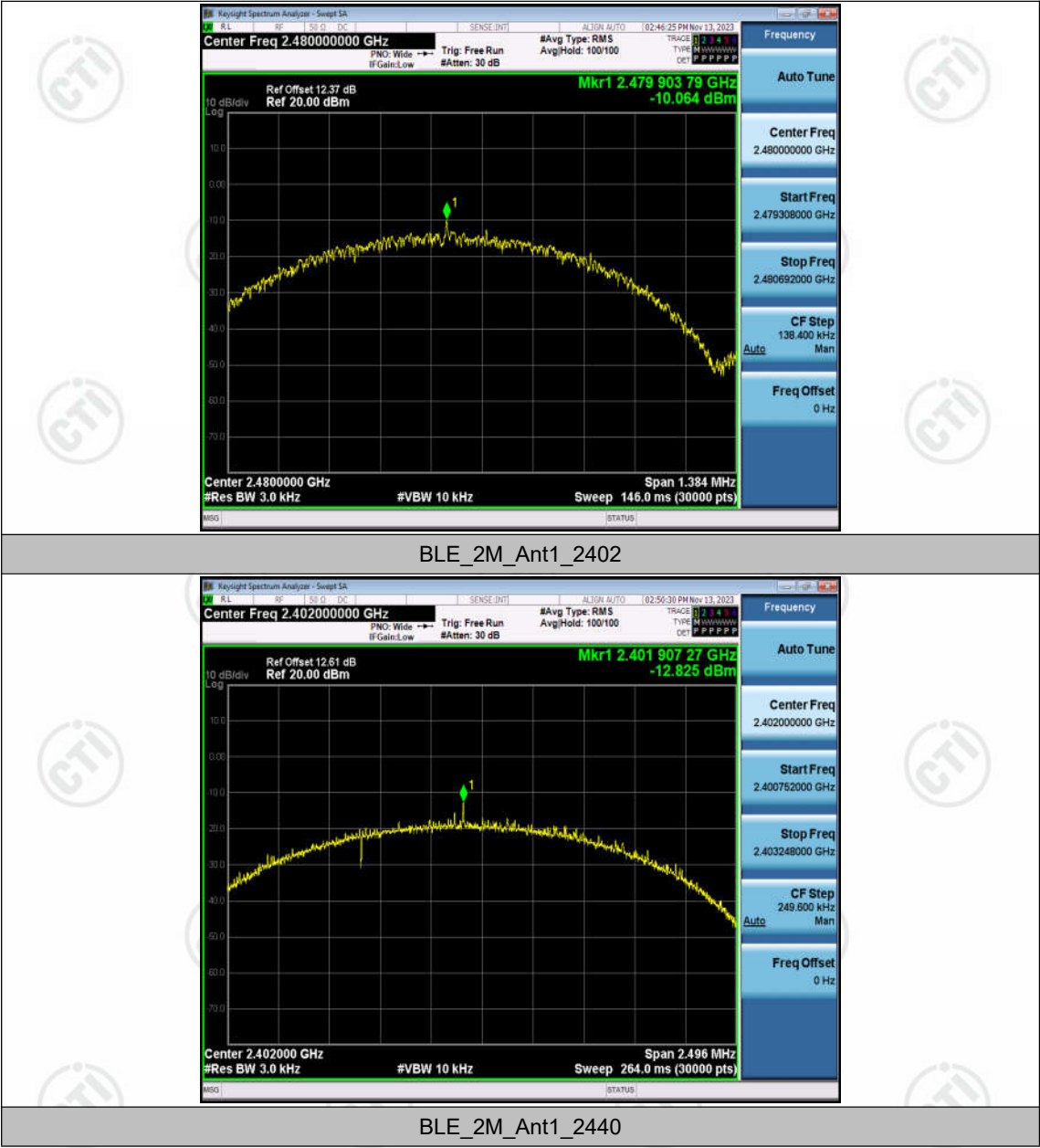
Appendix D: Maximum power spectral density

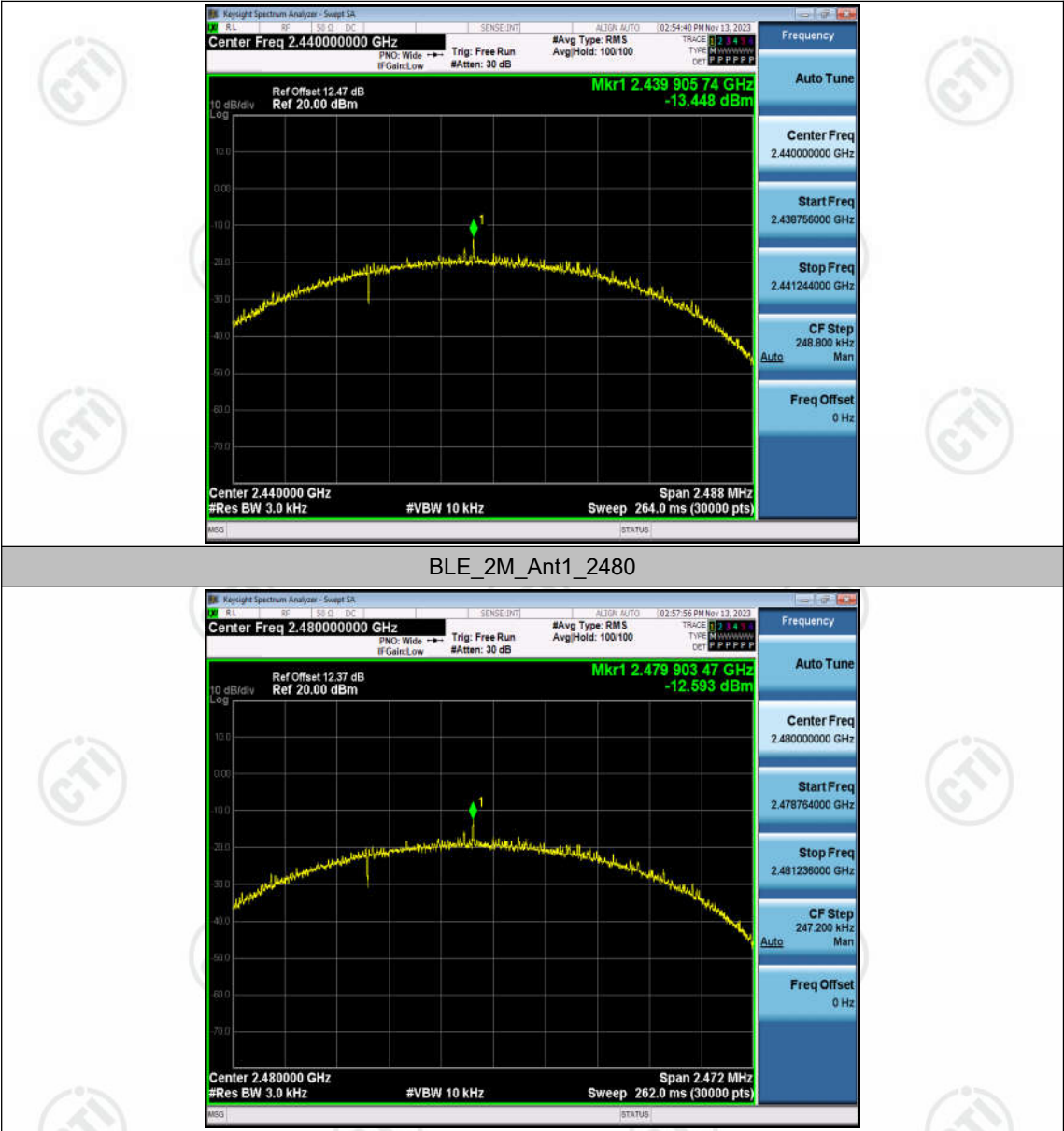
Test Result

Test Mode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-9.86	≤8.00	PASS
		2440	-10.56	≤8.00	PASS
		2480	-10.06	≤8.00	PASS
BLE_2M	Ant1	2402	-12.83	≤8.00	PASS
		2440	-13.45	≤8.00	PASS
		2480	-12.59	≤8.00	PASS

Test Graphs







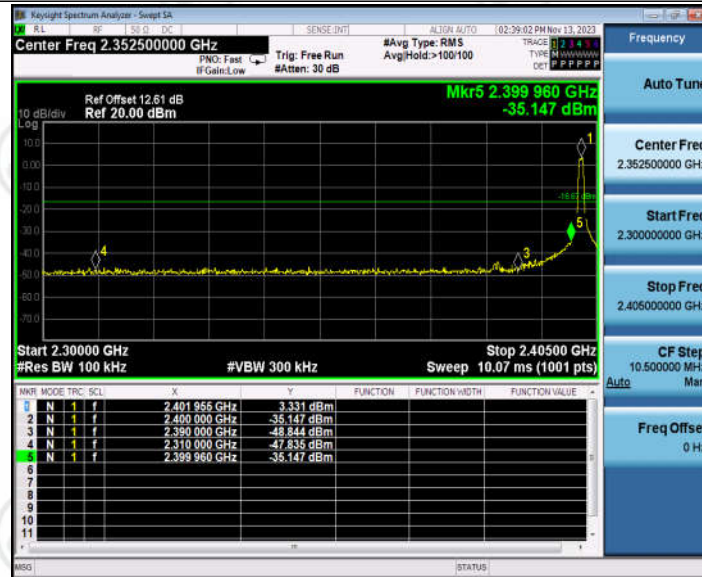
Appendix E: Band edge measurements

Test Result

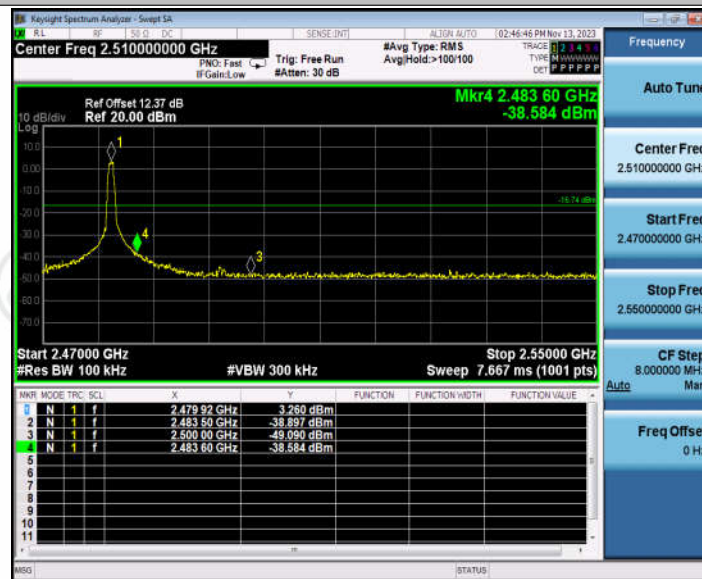
Test Mode	Antenna	ChName	Frequency [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
BLE_1M	Ant1	Low	2402	3.33	-35.15	≤-16.67	PASS
		High	2480	3.26	-38.58	≤-16.74	PASS
BLE_2M	Ant1	Low	2402	2.52	-30	≤-17.48	PASS
		High	2480	2.54	-36.95	≤-17.46	PASS

Test Graphs

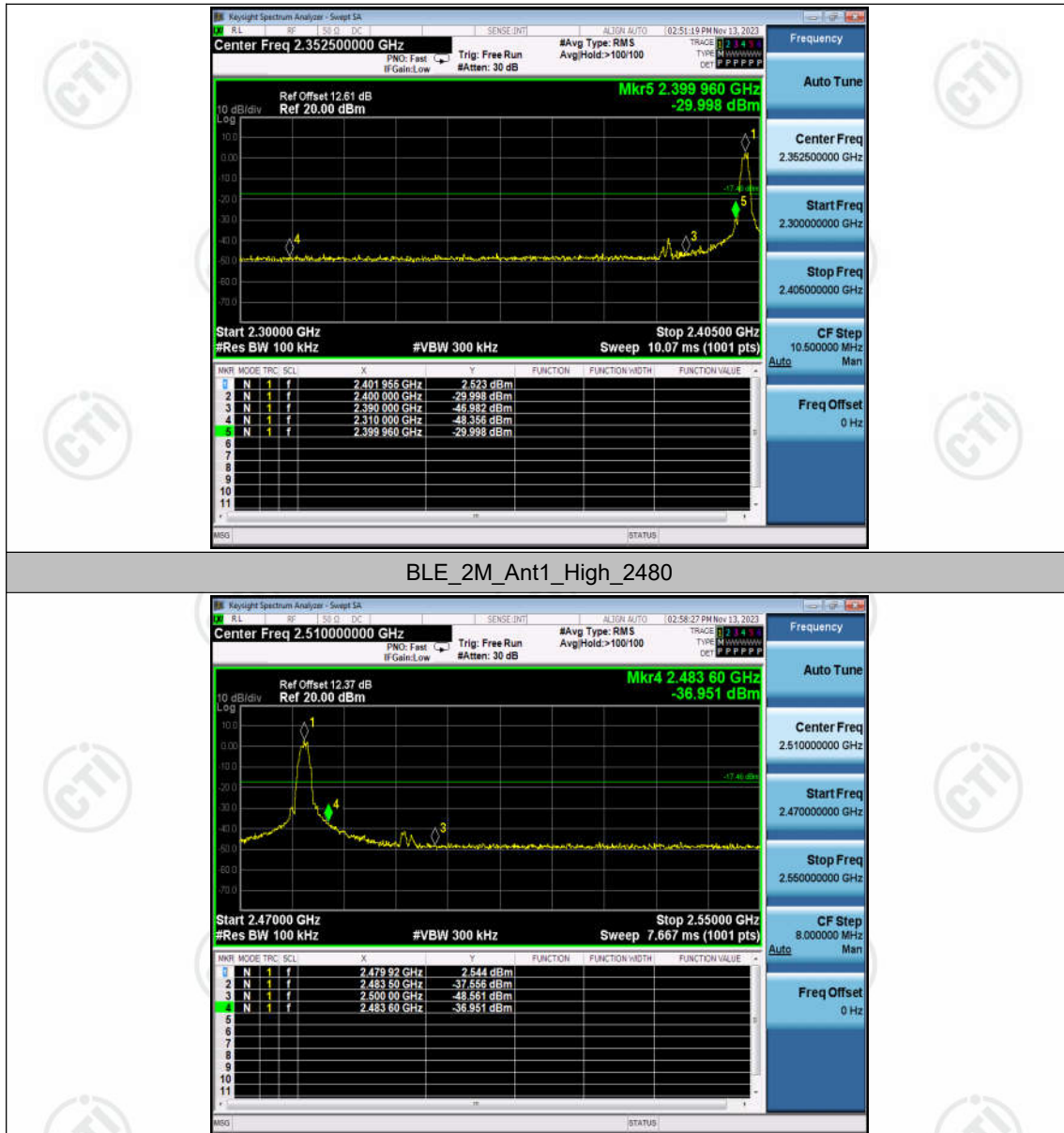
BLE_1M_Ant1_Low_2402



BLE_1M_Ant1_High_2480



BLE_2M_Ant1_Low_2402

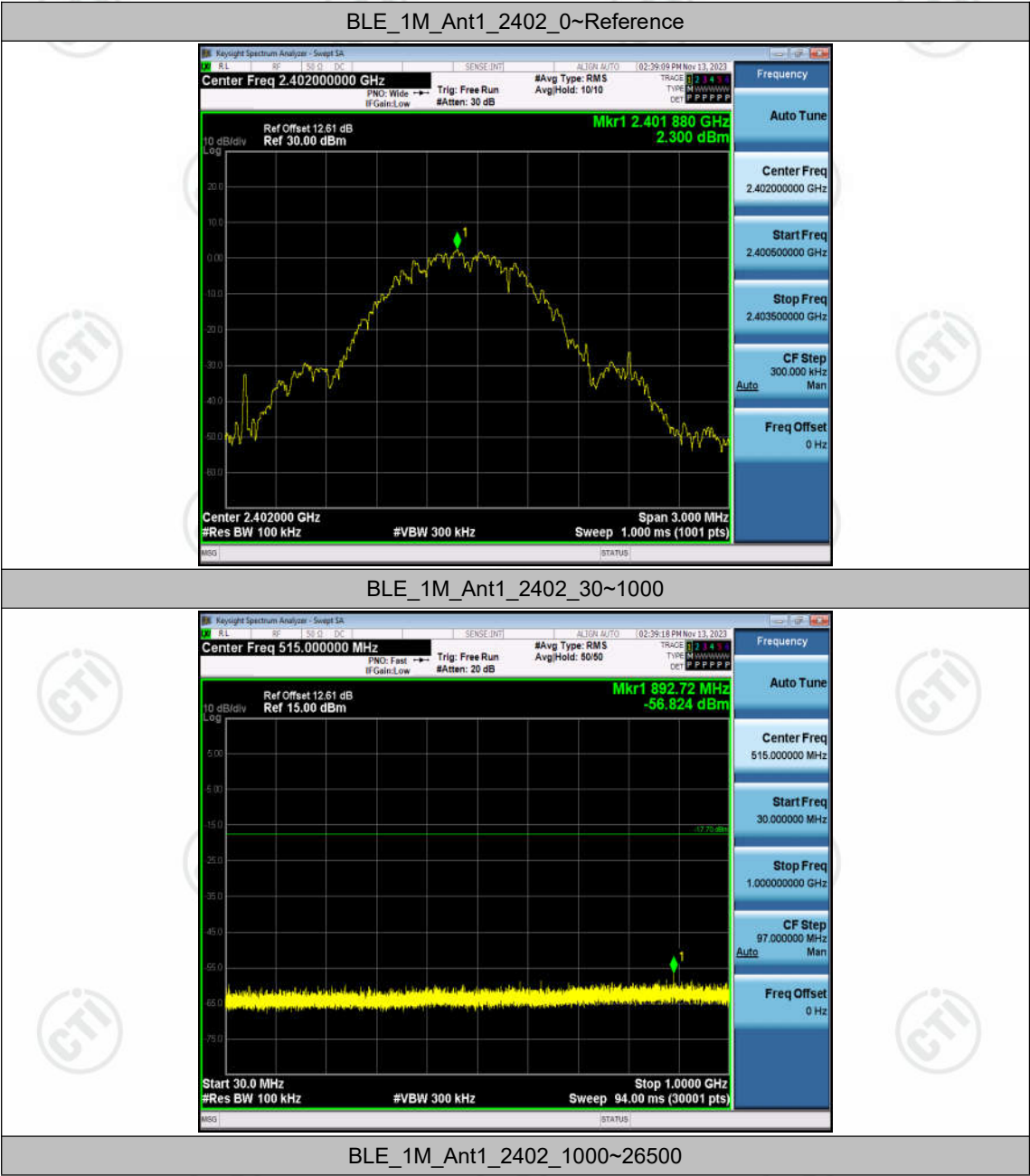


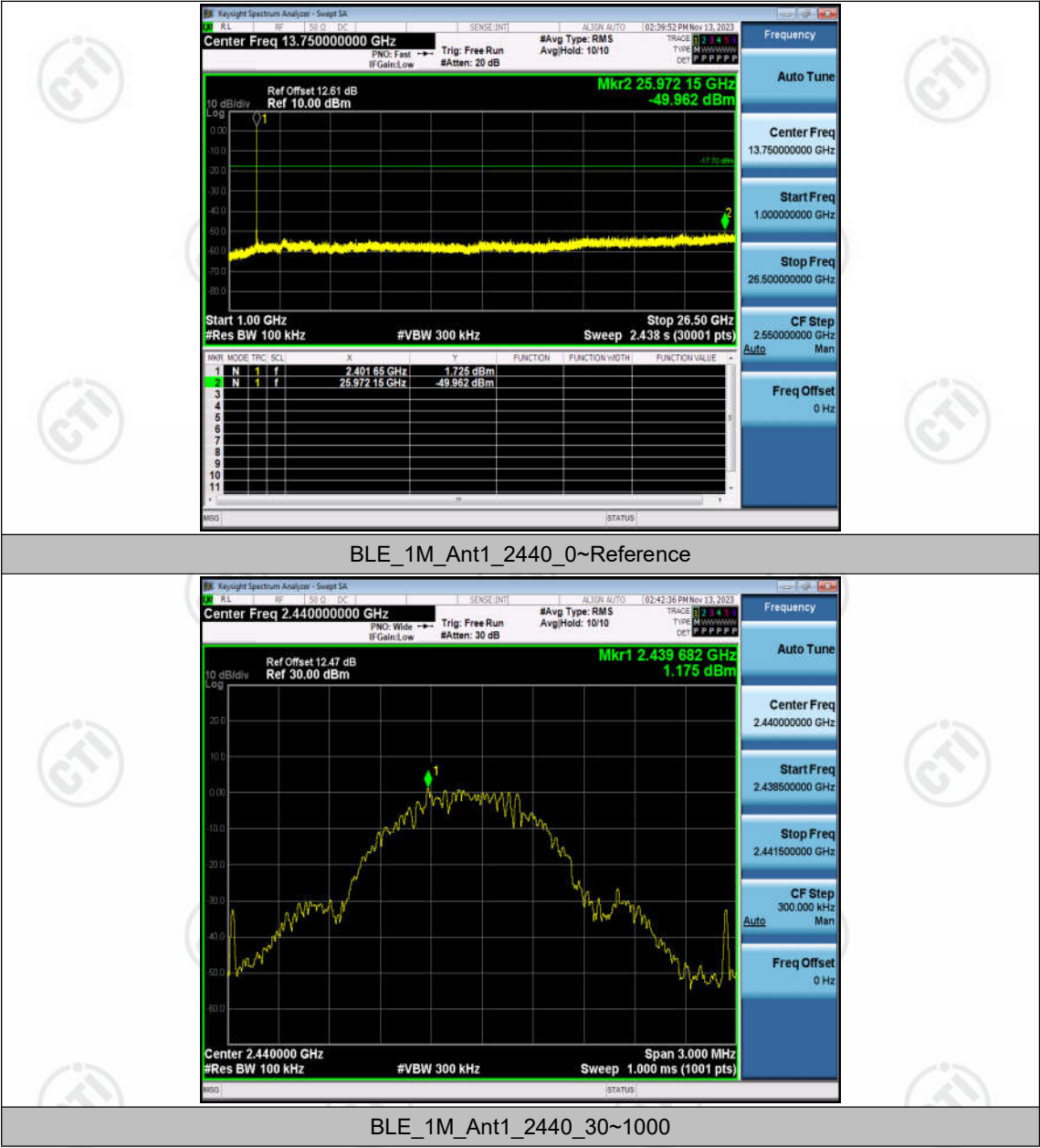
Appendix F: Conducted Spurious Emission

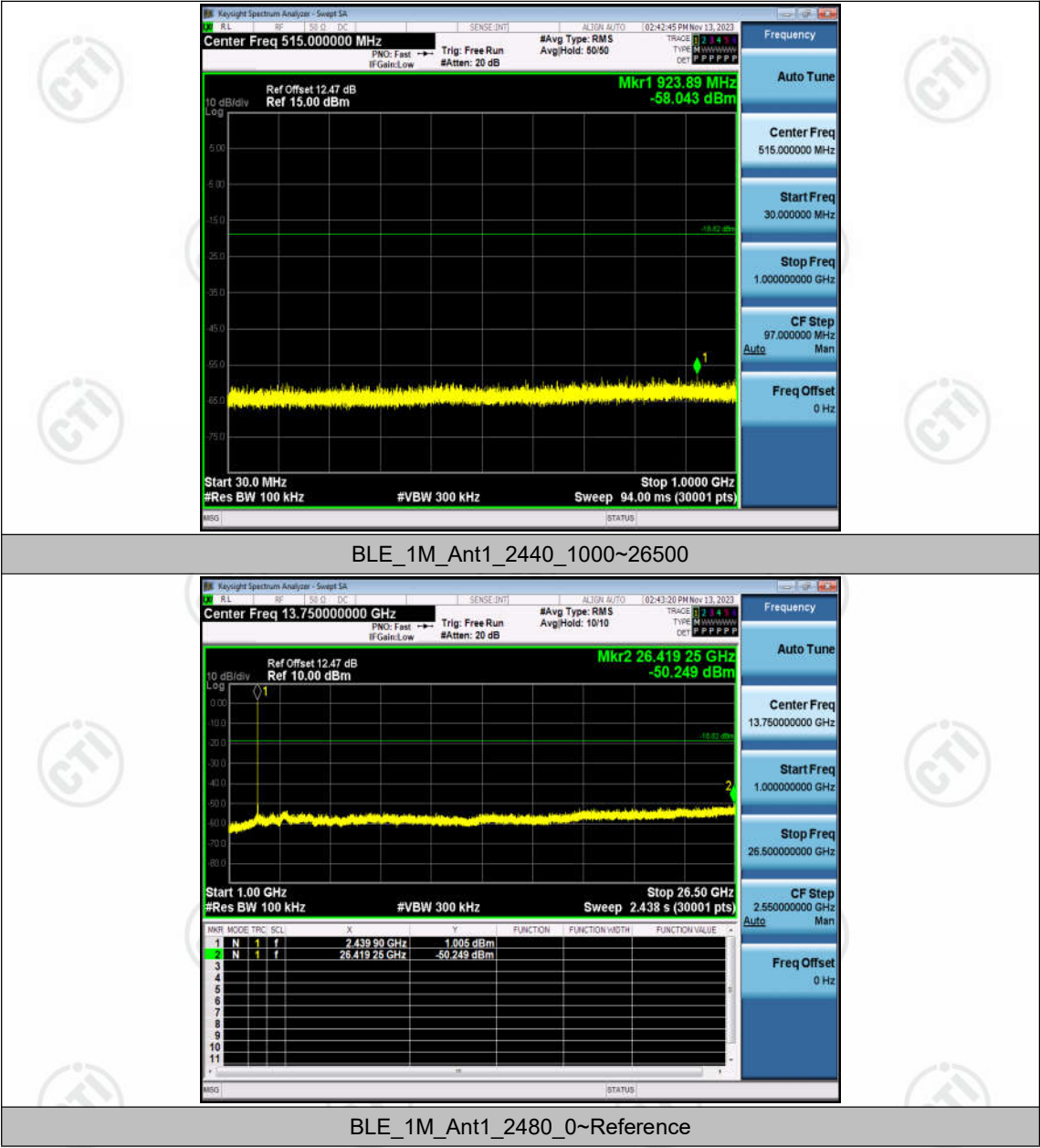
Test Result

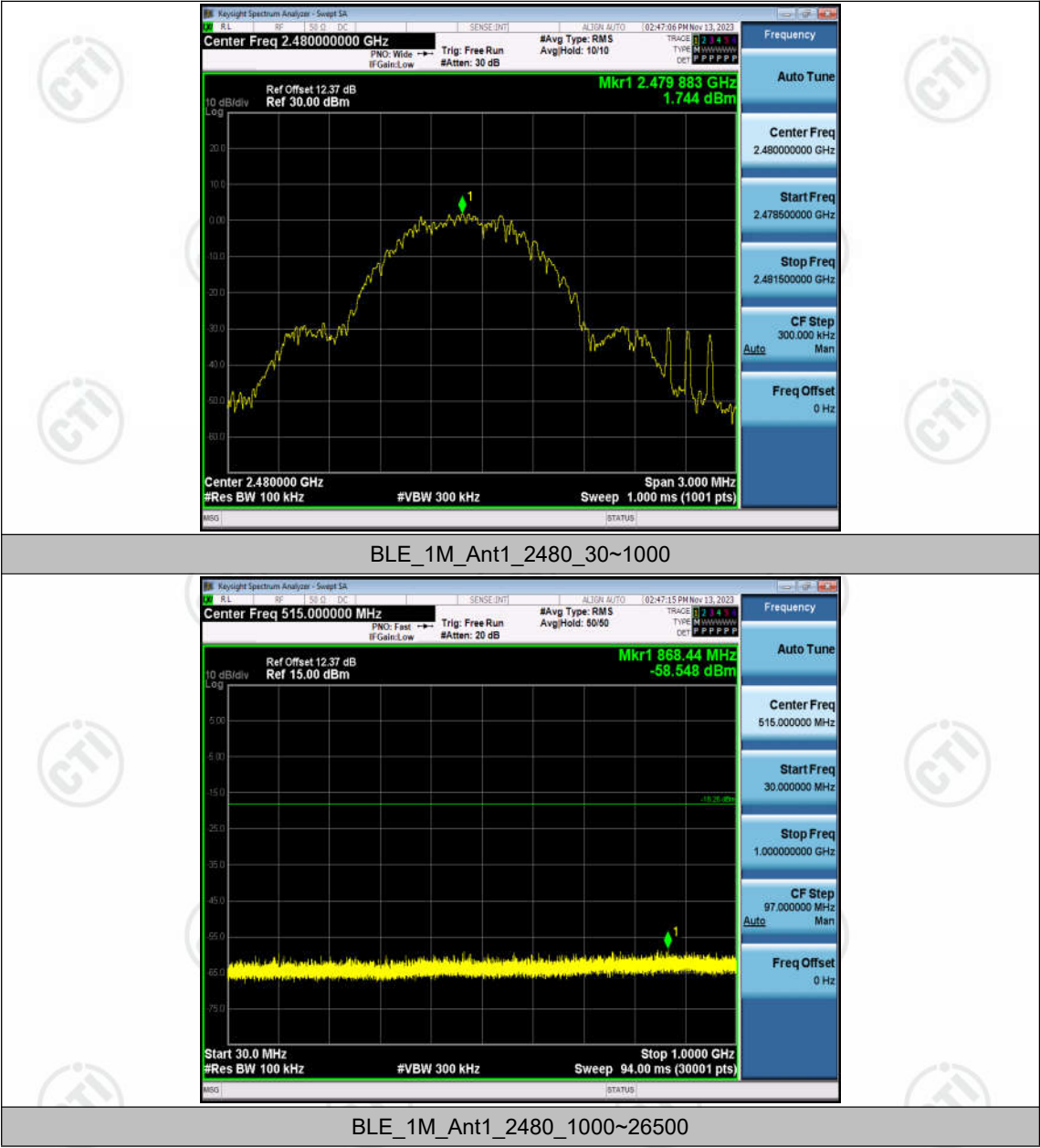
Test Mode	Antenna	Frequency[MHz]	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	2.30	2.30	---	PASS
			30~1000	2.30	-56.82	≤-17.7	PASS
			1000~26500	2.30	-49.96	≤-17.7	PASS
		2440	Reference	1.18	1.18	---	PASS
			30~1000	1.18	-58.04	≤-18.82	PASS
			1000~26500	1.18	-50.25	≤-18.82	PASS
		2480	Reference	1.74	1.74	---	PASS
			30~1000	1.74	-58.55	≤-18.26	PASS
			1000~26500	1.74	-46.15	≤-18.26	PASS
BLE_2M	Ant1	2402	Reference	-0.12	-0.12	---	PASS
			30~1000	-0.12	-58.07	≤-20.12	PASS
			1000~26500	-0.12	-50.42	≤-20.12	PASS
		2440	Reference	1.36	1.36	---	PASS
			30~1000	1.36	-57.81	≤-18.64	PASS
			1000~26500	1.36	-50.42	≤-18.64	PASS
		2480	Reference	-0.31	-0.31	---	PASS
			30~1000	-0.31	-58.1	≤-20.31	PASS
			1000~26500	-0.31	-50.29	≤-20.31	PASS

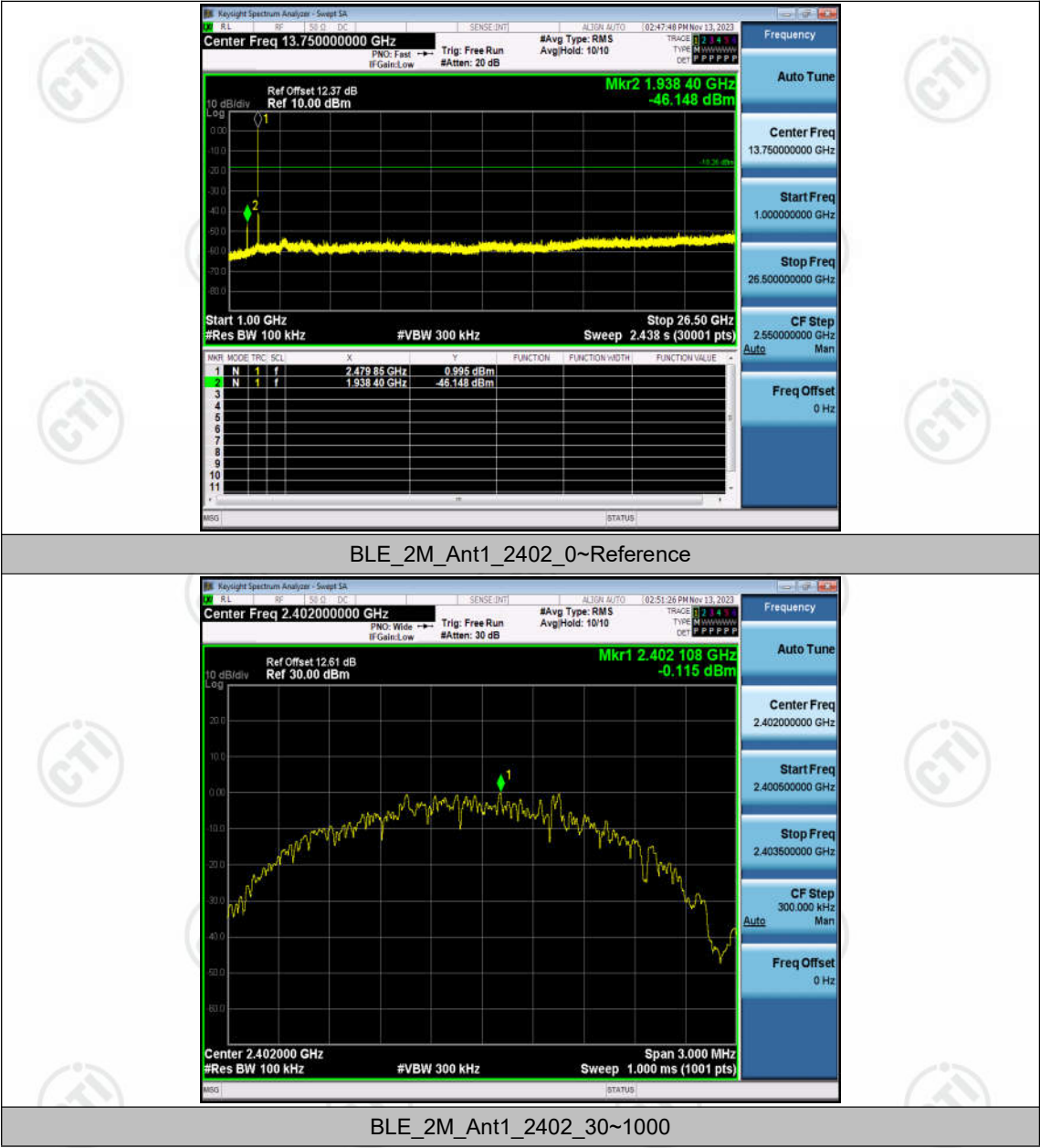
Test Graphs

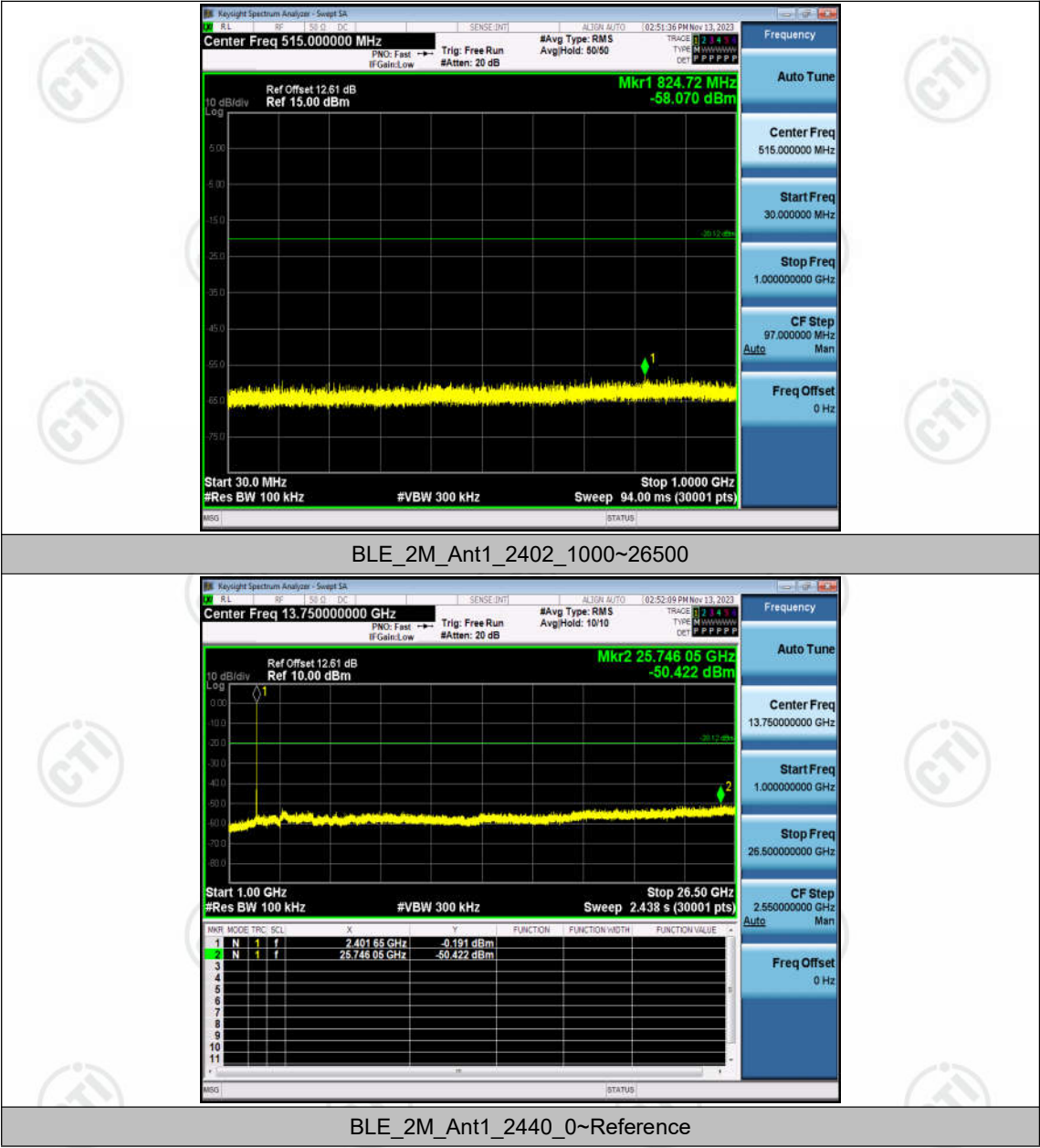


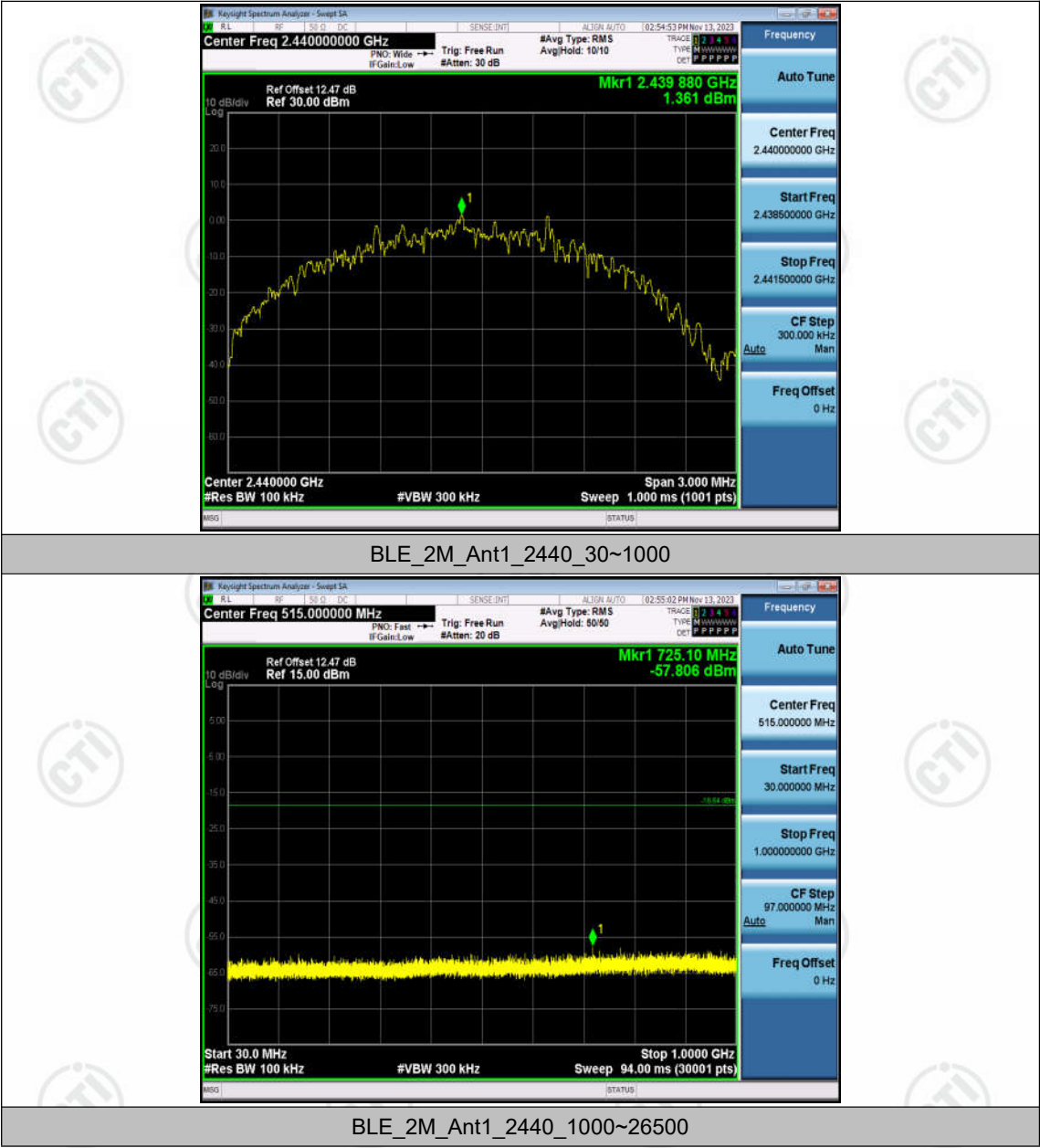


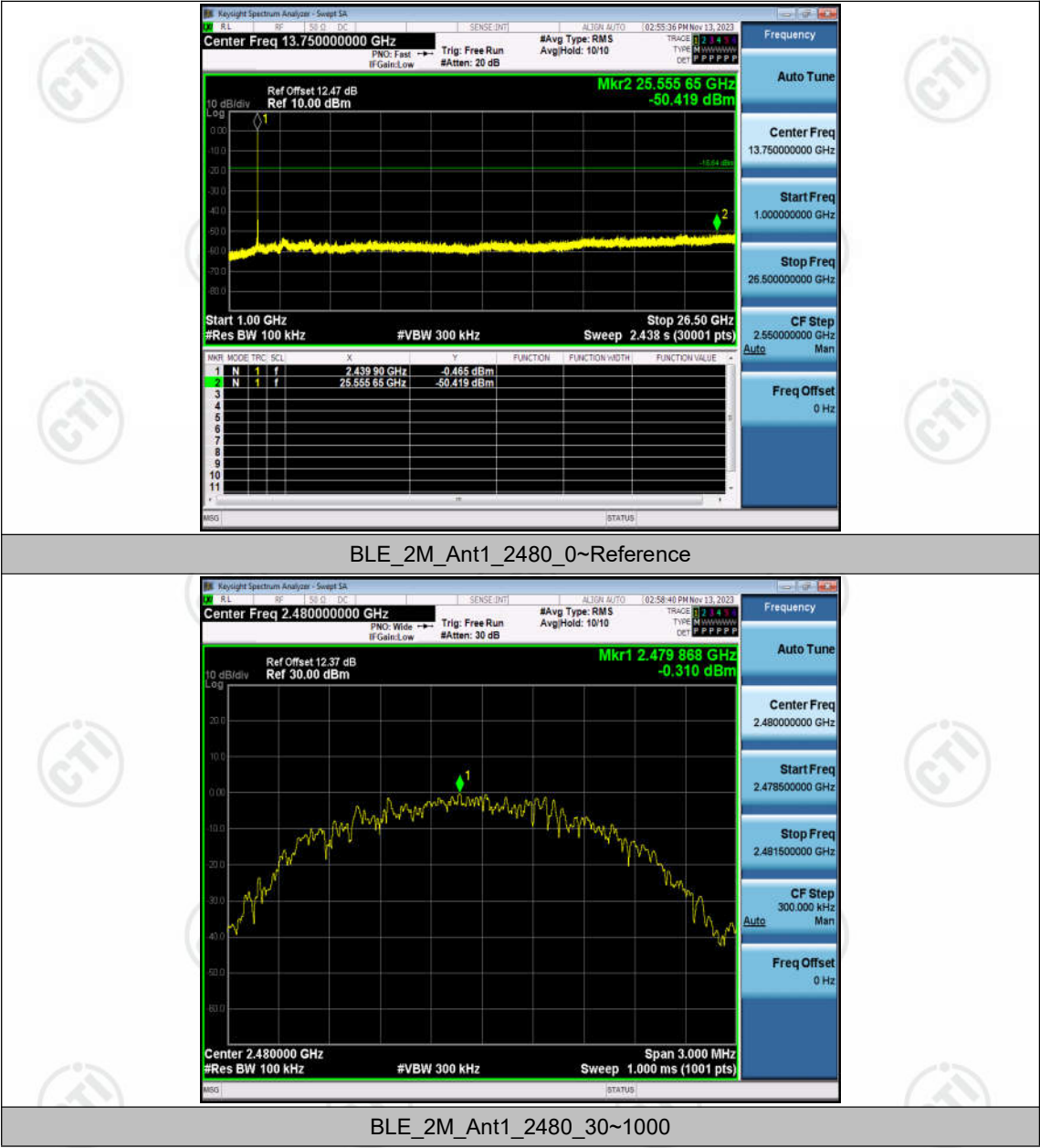


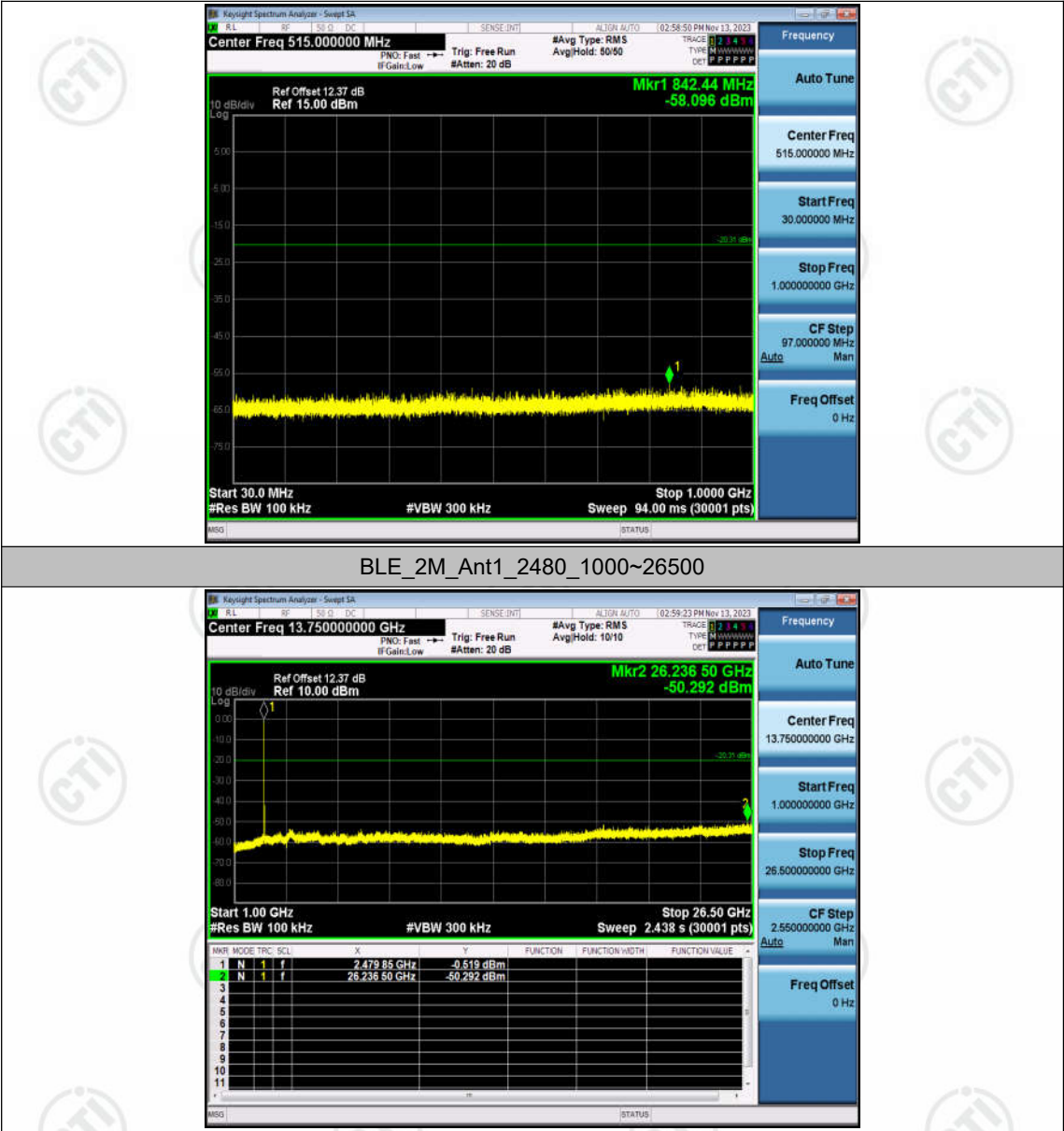










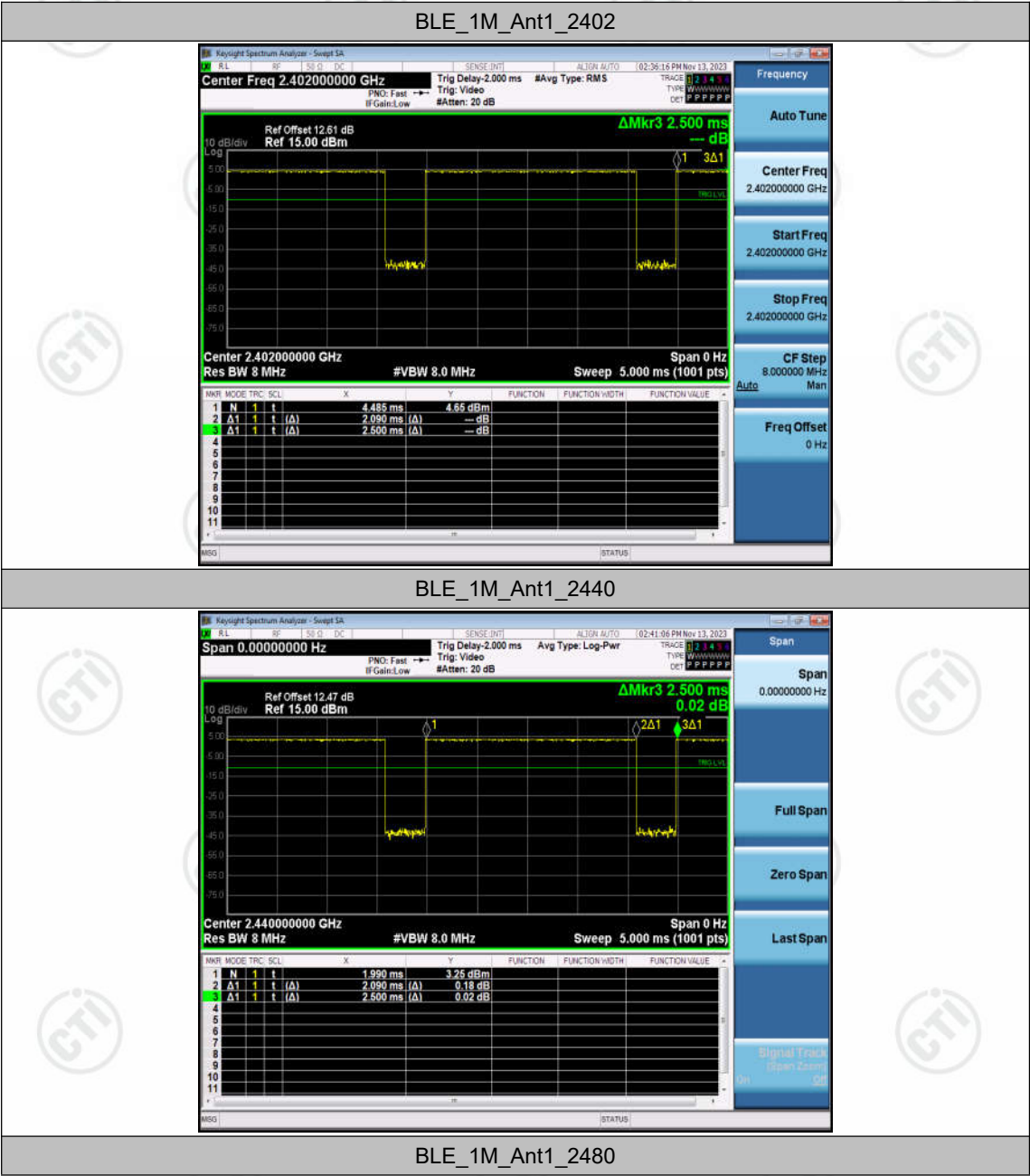


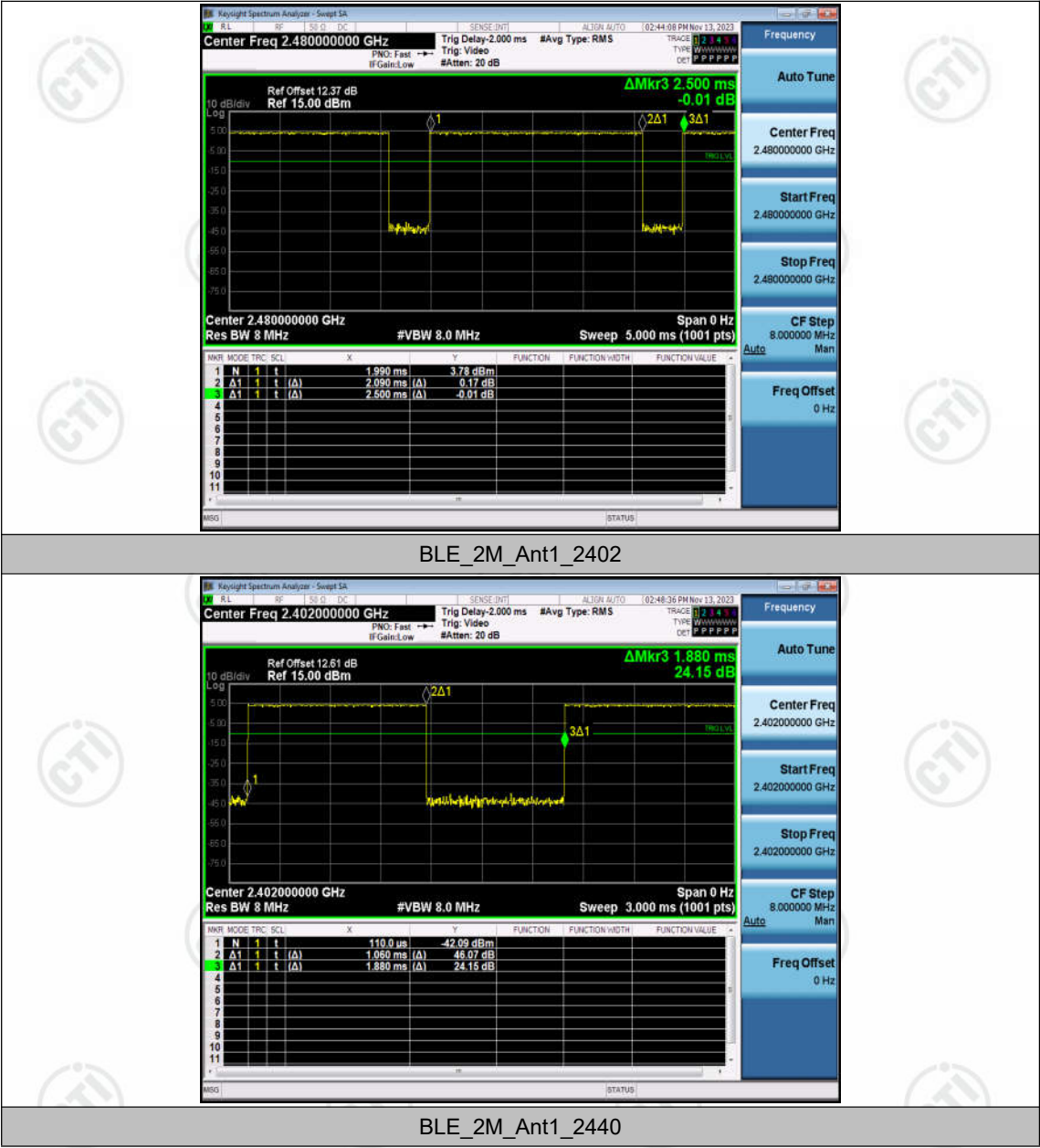
Appendix G: Duty Cycle

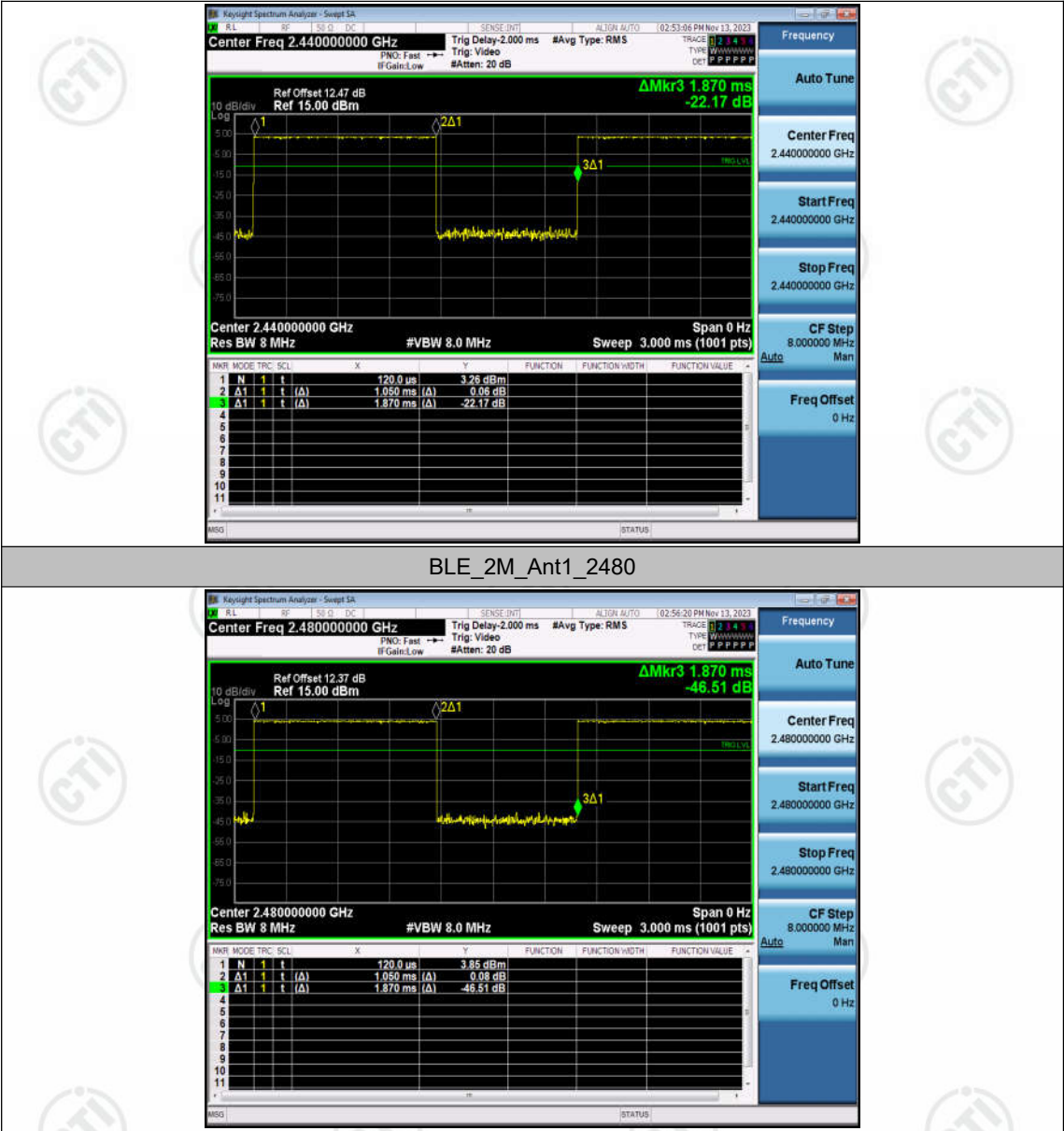
Test Result

Test Mode	Antenna	Frequency[MHz]	ON Time [ms]	Period [ms]	Duty Cycle [%]	Duty Cycle Factor[dB]
BLE_1M	Ant1	2402	2.09	2.50	83.60	0.78
		2440	2.09	2.50	83.60	0.78
		2480	2.09	2.50	83.60	0.78
BLE_2M	Ant1	2402	1.06	1.88	56.38	2.49
		2440	1.05	1.87	56.15	2.51
		2480	1.05	1.87	56.15	2.51

Test Graphs







*** End of Report ***