

Appendix: Bluetooth LE

Contents

Appendix A: DTS Bandwidth 3

 Test Result 3

 Test Graphs 4

Appendix B: Occupied Channel Bandwidth7

 Test Result 7

 Test Graphs 8

Appendix C: Maximum conducted output power11

 Test Result 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 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	0.688	2401.656	2402.344	0.5	PASS
BLE_1M	Ant1	2440	0.704	2439.648	2440.352	0.5	PASS
BLE_1M	Ant1	2480	0.700	2479.652	2480.352	0.5	PASS
BLE_2M	Ant1	2402	1.376	2401.324	2402.700	0.5	PASS
BLE_2M	Ant1	2440	1.360	2439.328	2440.688	0.5	PASS
BLE_2M	Ant1	2480	1.188	2479.416	2480.604	0.5	PASS

Test Graphs







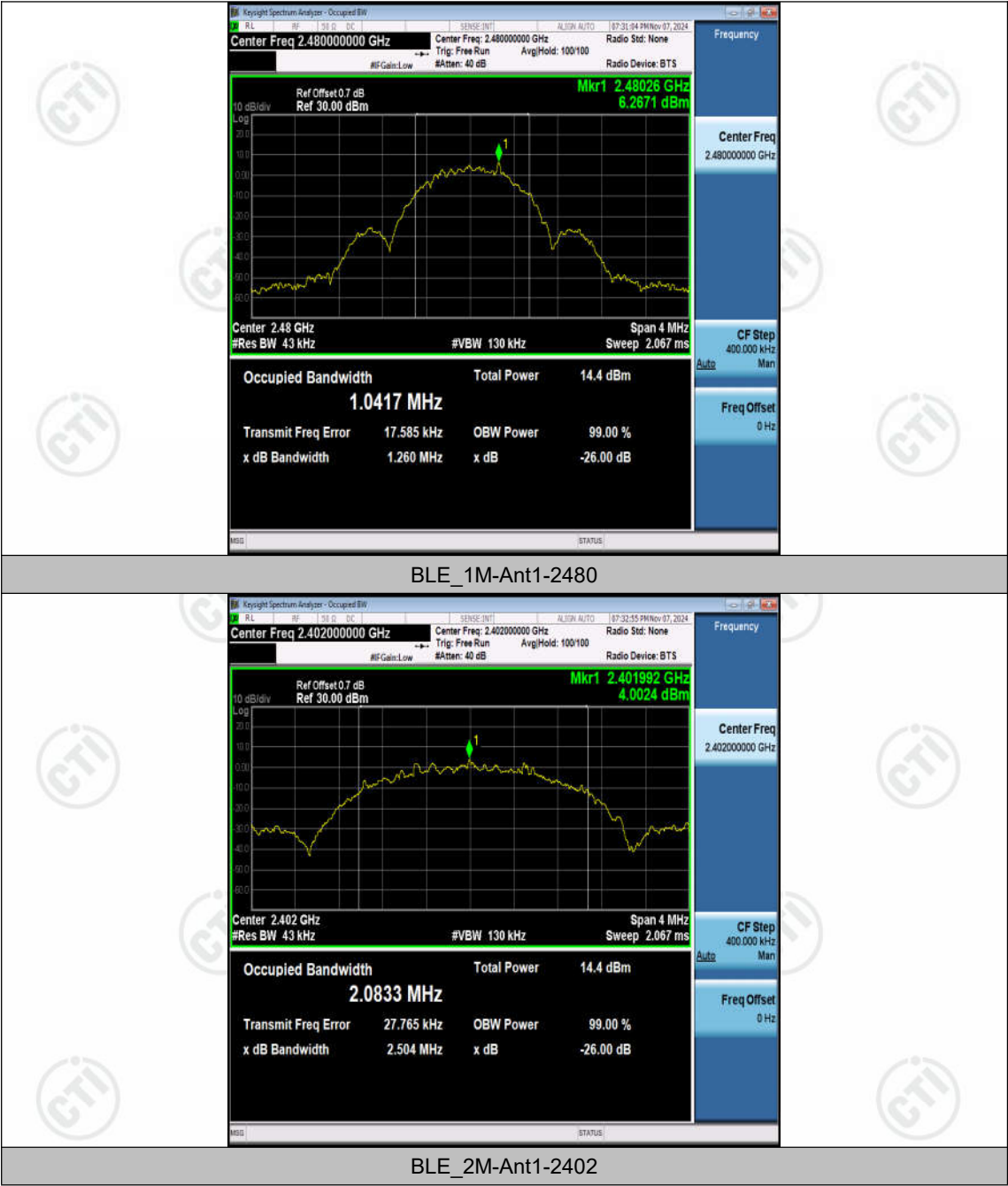
Appendix B: Occupied Channel Bandwidth

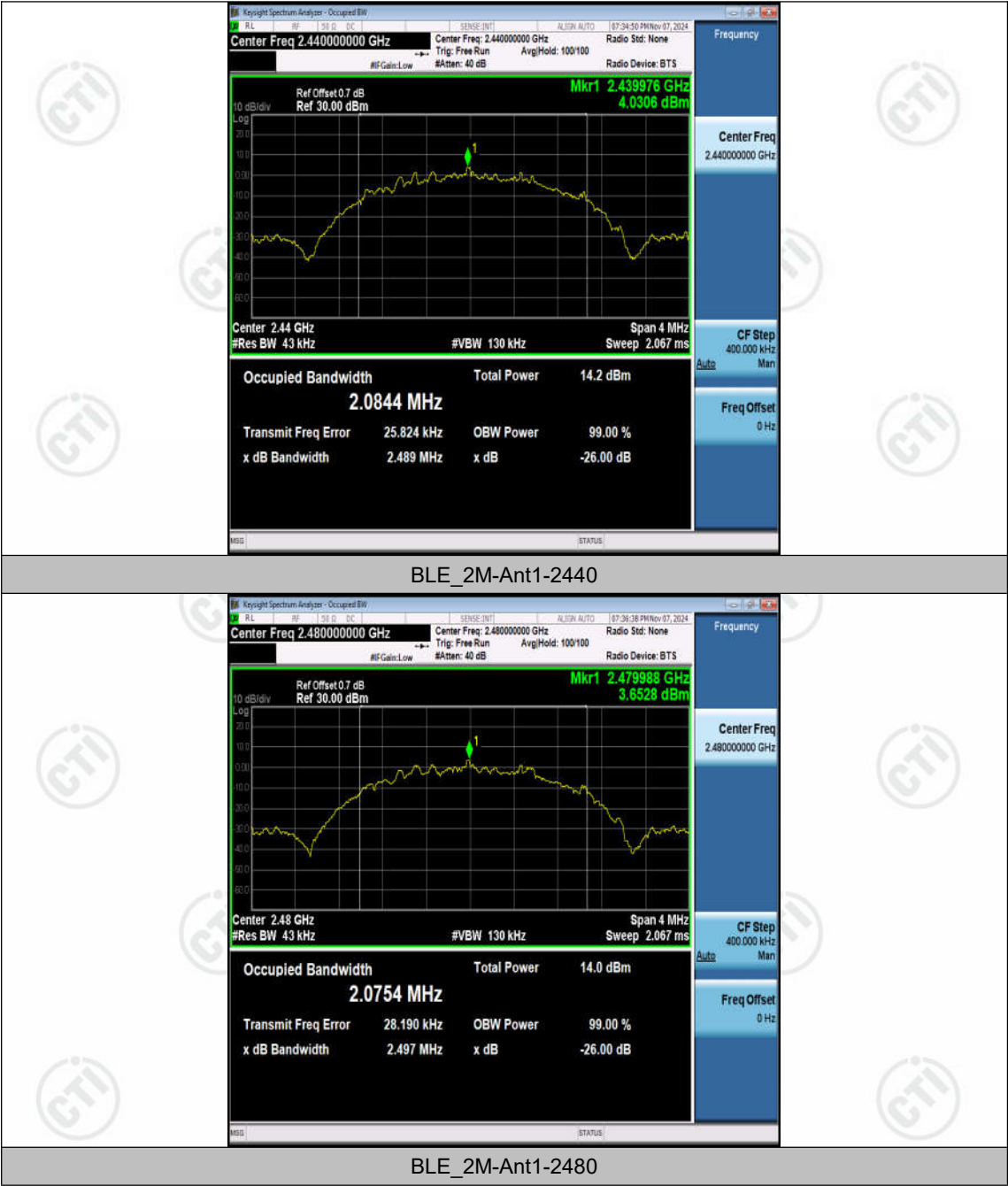
Test Result

Test Mode	Antenna	Frequency [MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit [MHz]	Verdict
BLE_1M	Ant1	2402	1.0431	2401.4919	2402.5350	---	---
BLE_1M	Ant1	2440	1.0377	2439.4935	2440.5312	---	---
BLE_1M	Ant1	2480	1.0417	2479.4967	2480.5384	---	---
BLE_2M	Ant1	2402	2.0833	2400.9861	2403.0694	---	---
BLE_2M	Ant1	2440	2.0844	2438.9836	2441.0680	---	---
BLE_2M	Ant1	2480	2.0754	2478.9905	2481.0659	---	---

Test Graphs





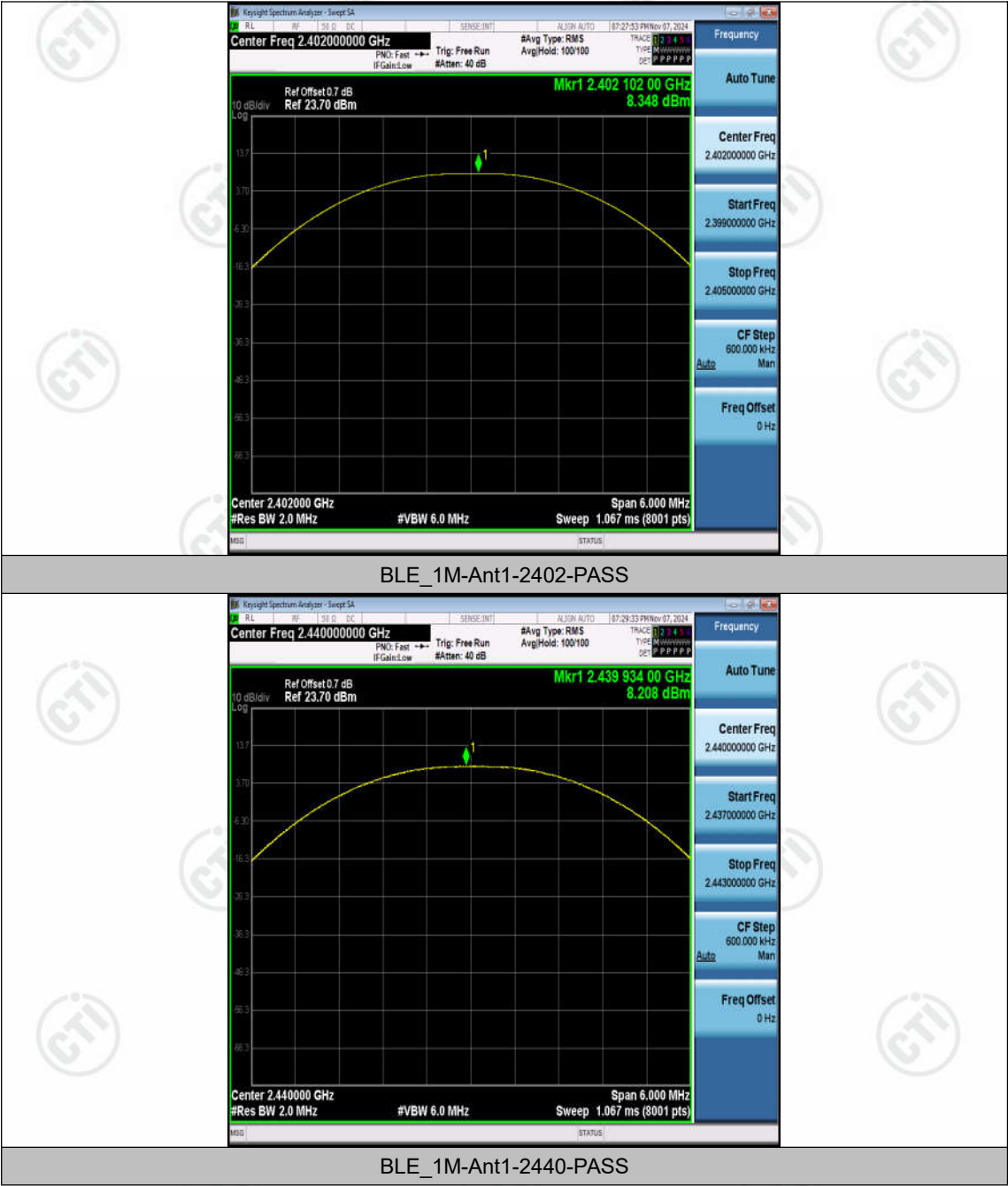


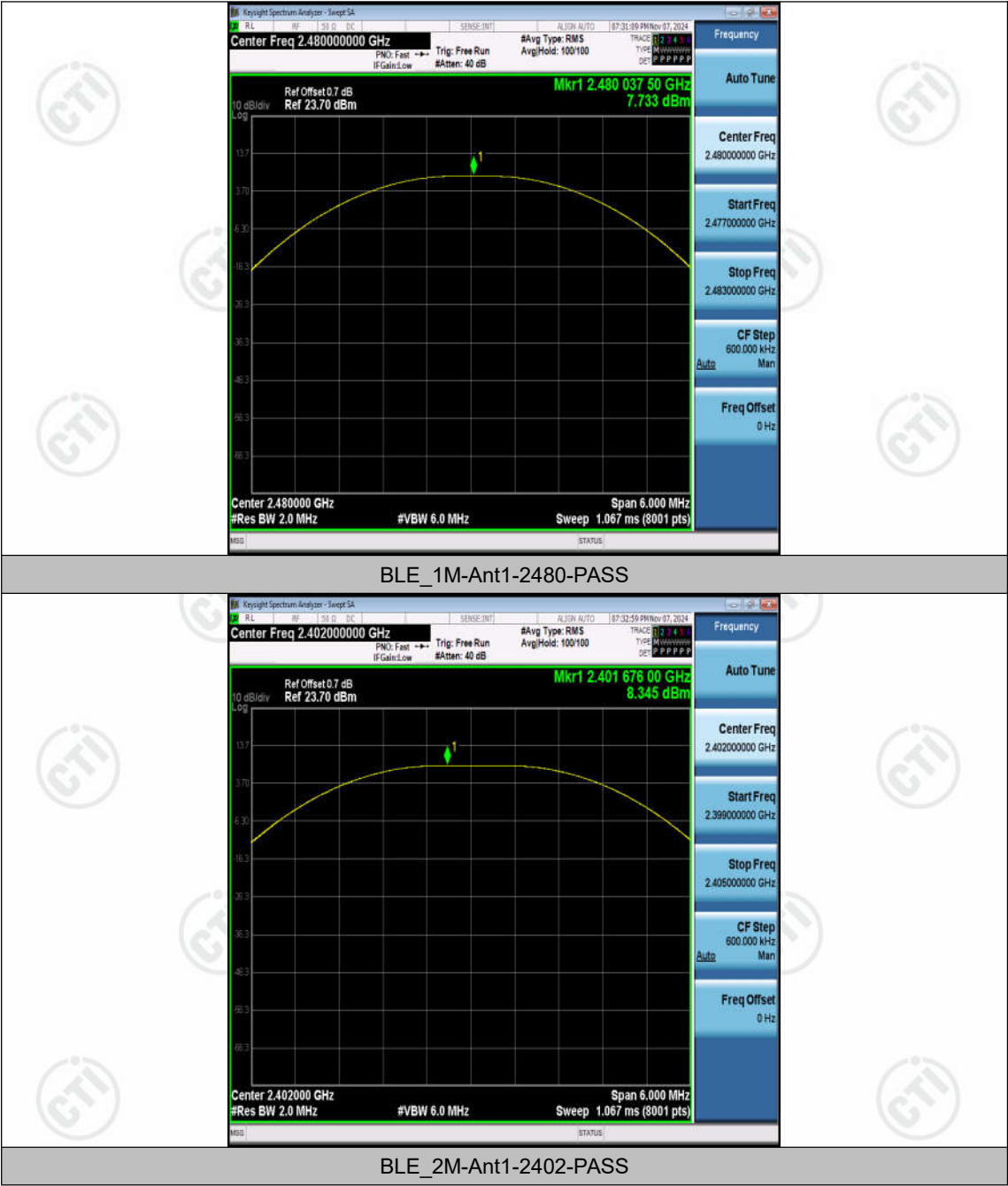
Appendix C: Maximum conducted output power

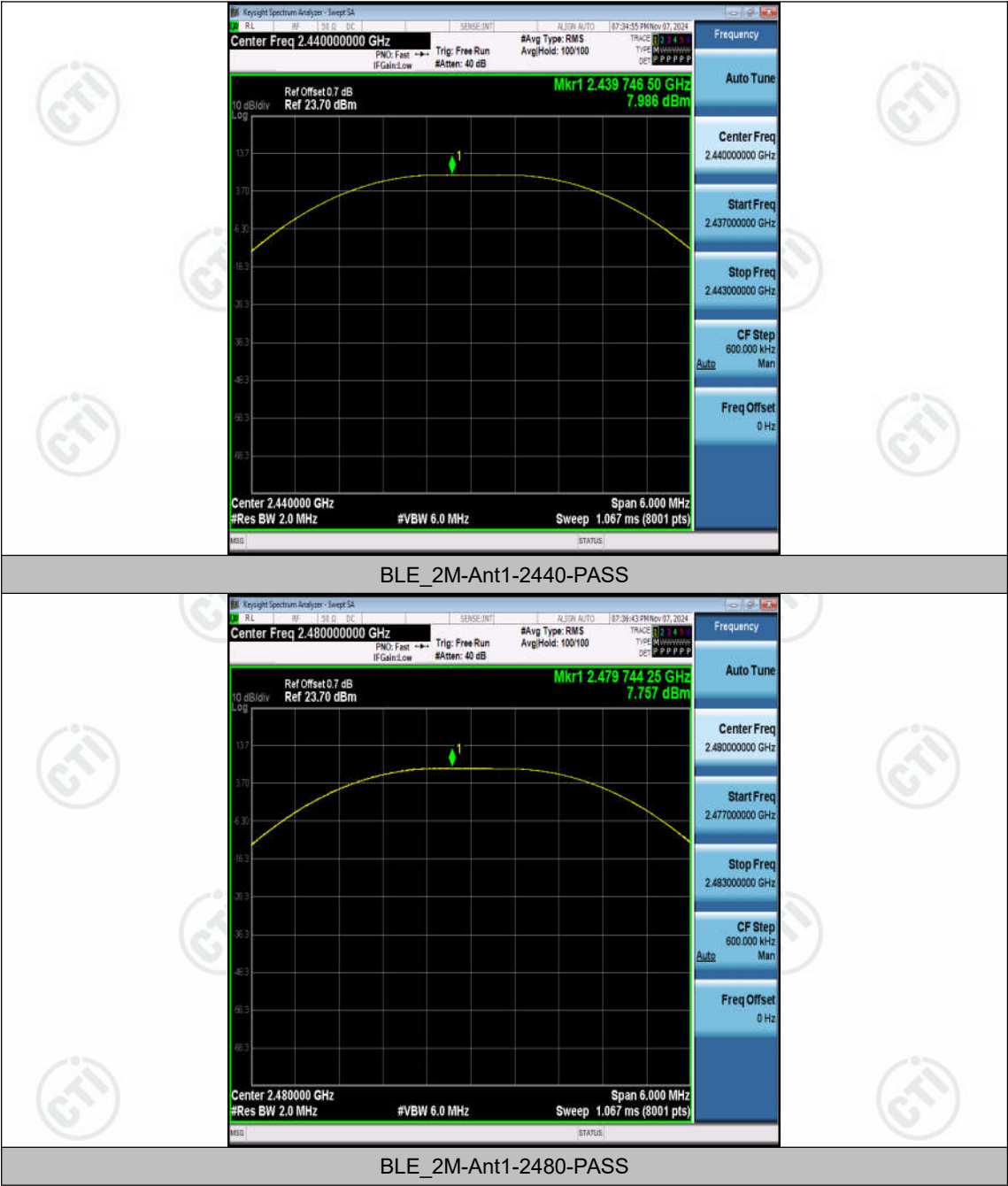
Test Result

Test Mode	Antenna	Frequency [MHz]	Conducted Peak Power[dBm]	Conducted Limit [dBm]	Verdict
BLE_1M	Ant1	2402	8.35	≤30	PASS
BLE_1M	Ant1	2440	8.21	≤30	PASS
BLE_1M	Ant1	2480	7.73	≤30	PASS
BLE_2M	Ant1	2402	8.35	≤30	PASS
BLE_2M	Ant1	2440	7.99	≤30	PASS
BLE_2M	Ant1	2480	7.76	≤30	PASS

Test Graphs Peak





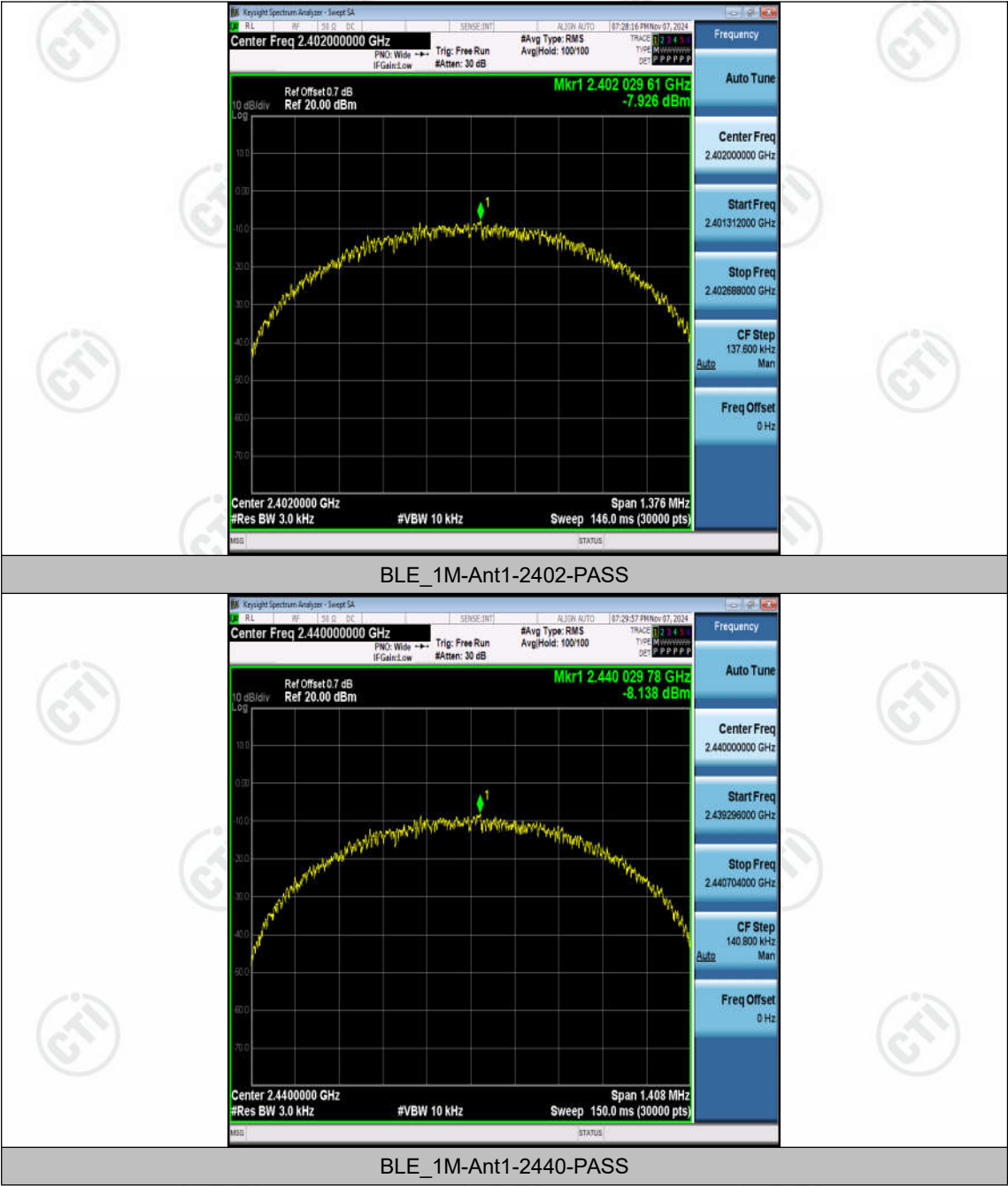


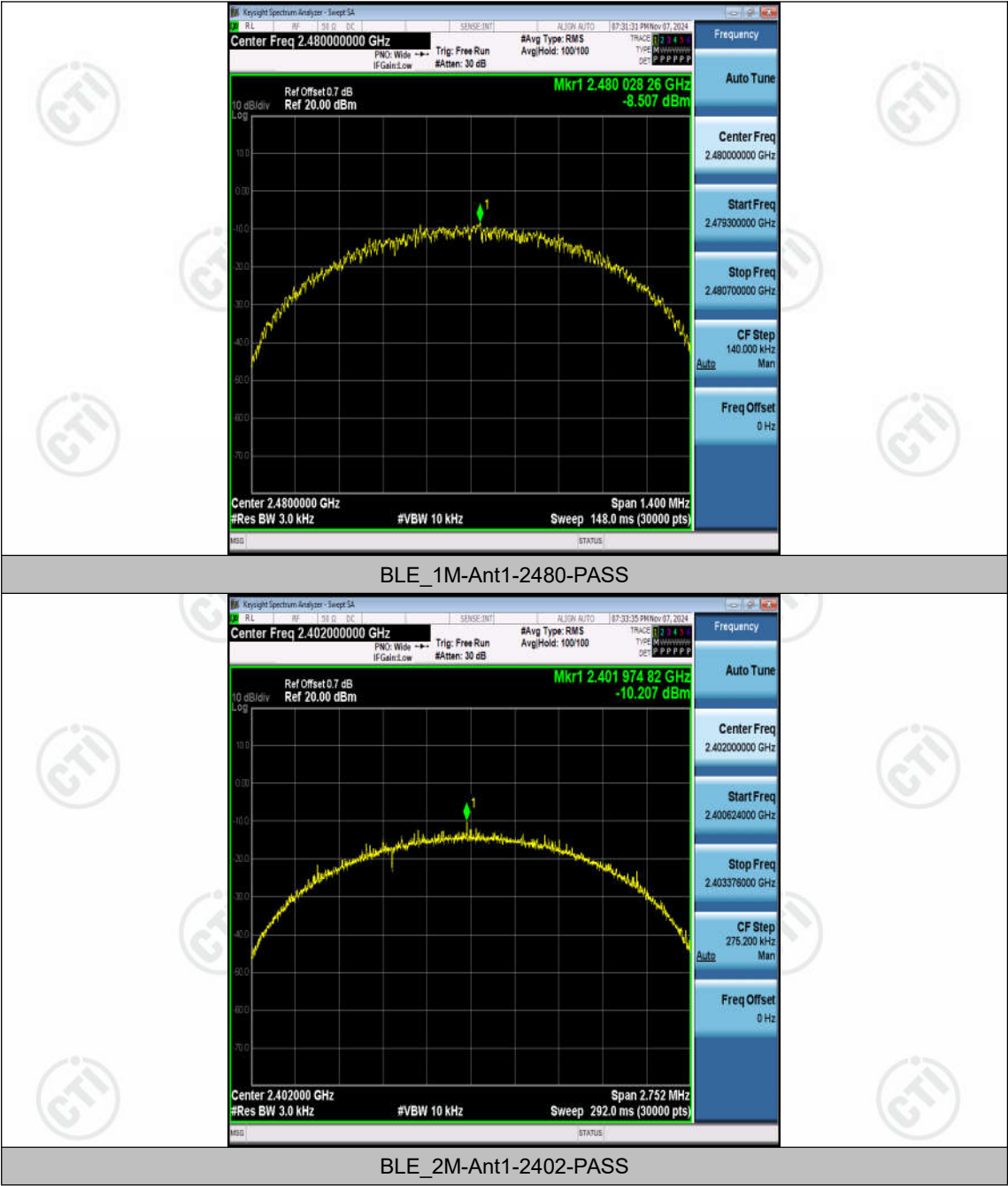
Appendix D: Maximum power spectral density

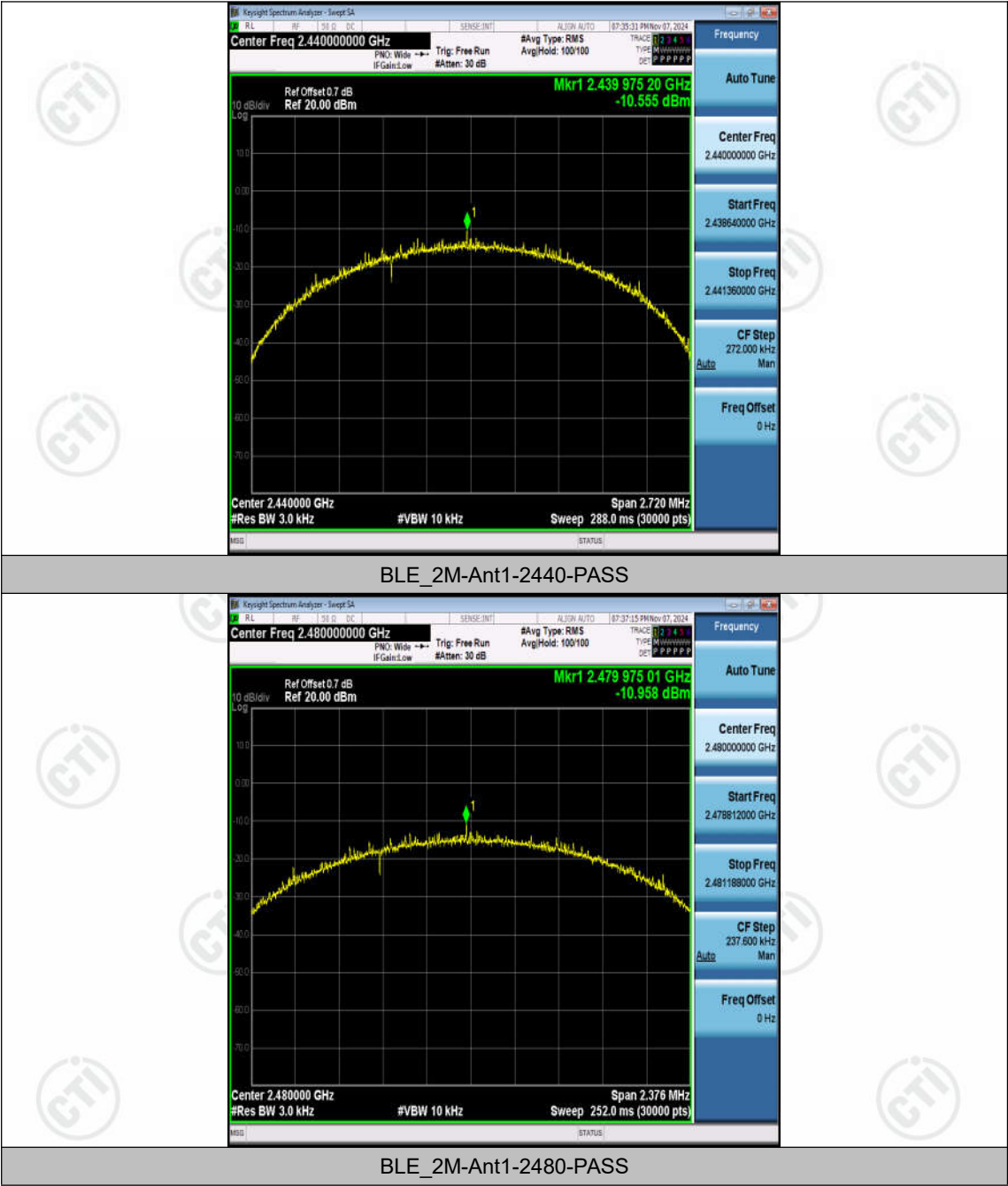
Test Result

Test Mode	Antenna	Frequency [MHz]	Result [dBm/3kHz]	Limit [dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-7.93	≤8.00	PASS
BLE_1M	Ant1	2440	-8.14	≤8.00	PASS
BLE_1M	Ant1	2480	-8.51	≤8.00	PASS
BLE_2M	Ant1	2402	-10.21	≤8.00	PASS
BLE_2M	Ant1	2440	-10.56	≤8.00	PASS
BLE_2M	Ant1	2480	-10.96	≤8.00	PASS

Test Graphs







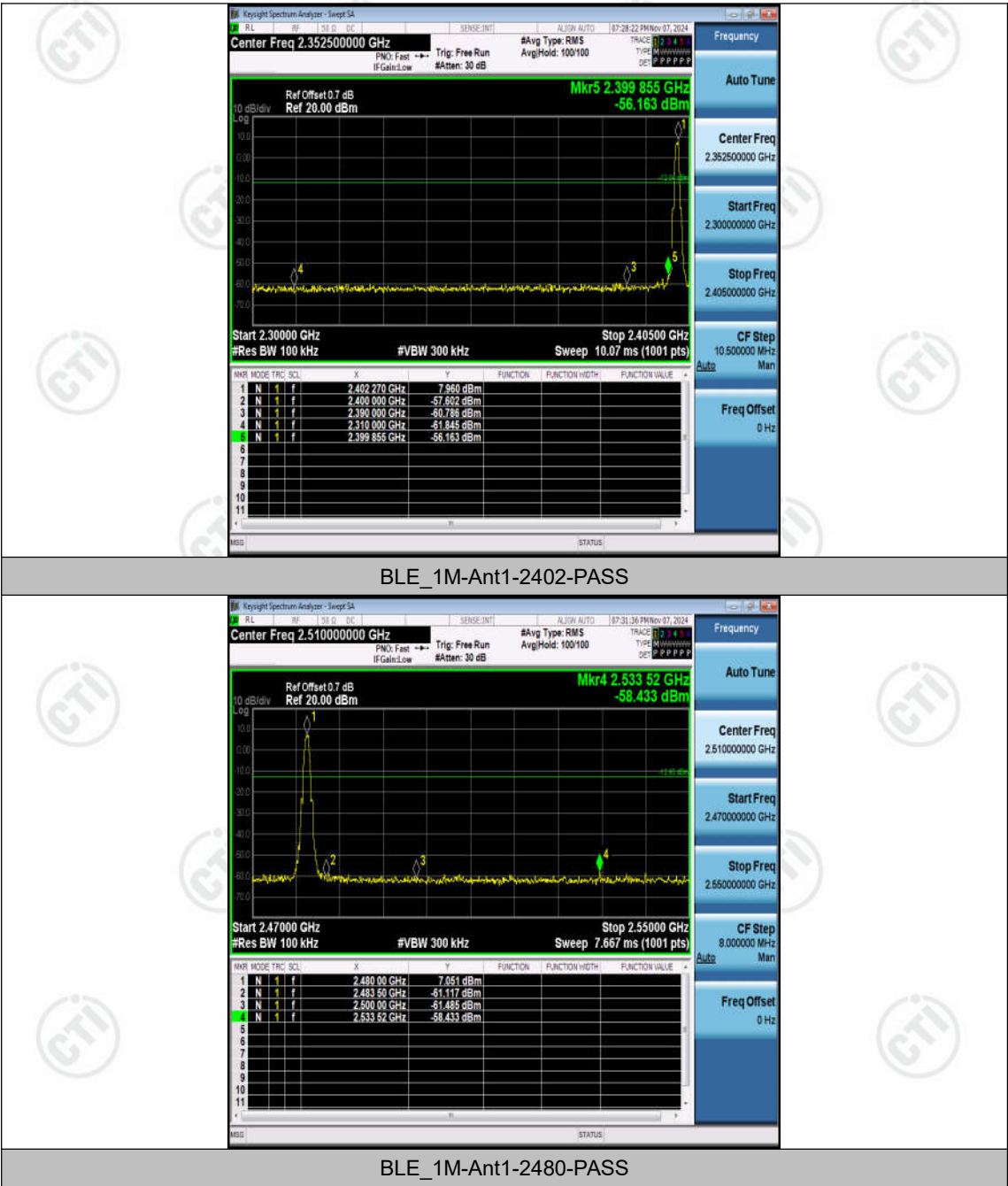
Appendix E: Band edge measurements

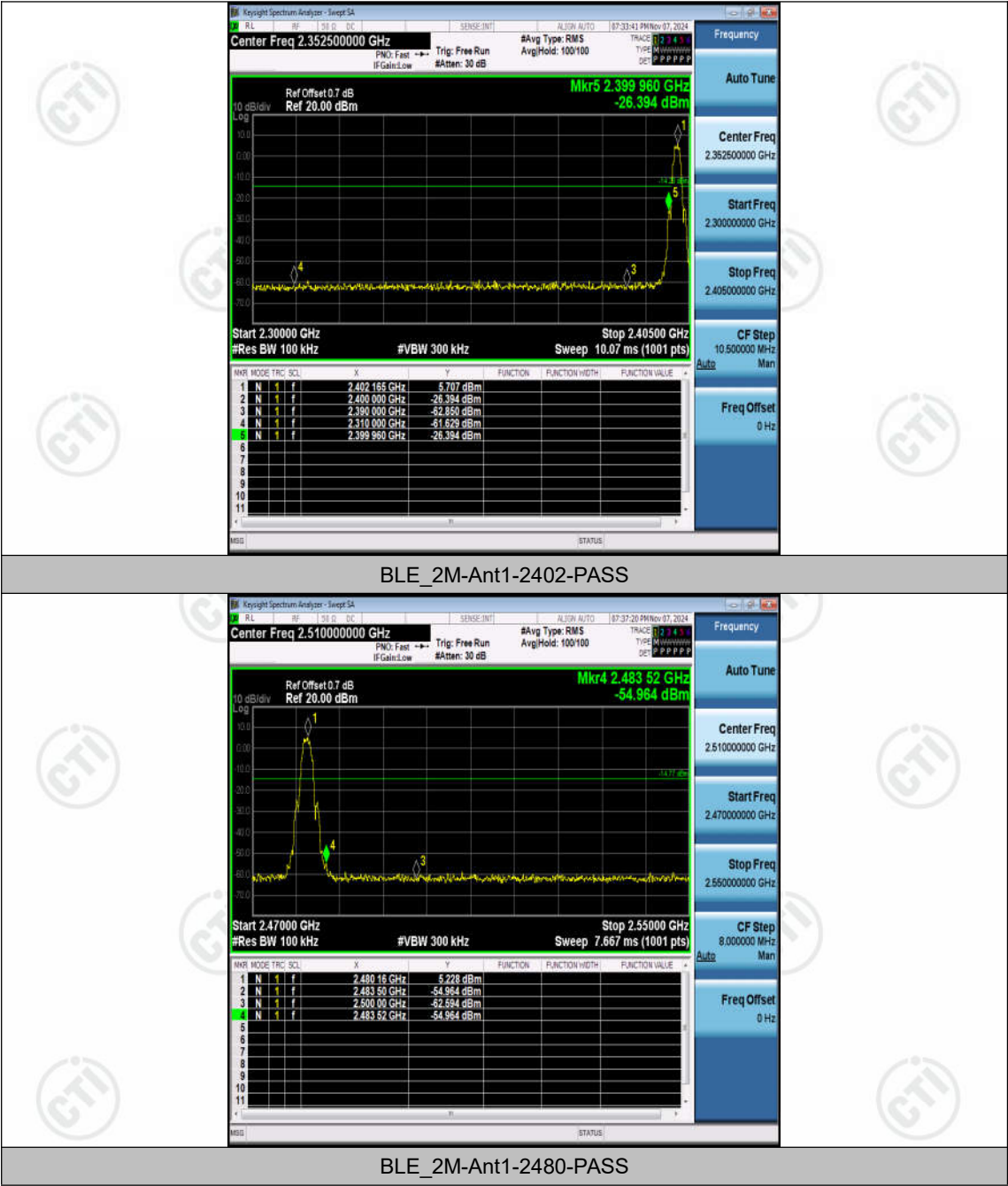
Test Result

Test Mode	Antenna	ChName	Frequency [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
BLE_1M	Ant1	Low	2402	7.96	-56.16	≤-12.04	PASS
BLE_1M	Ant1	High	2480	7.05	-58.43	≤-12.95	PASS
BLE_2M	Ant1	Low	2402	5.71	-26.39	≤-14.29	PASS
BLE_2M	Ant1	High	2480	5.23	-54.96	≤-14.77	PASS

Note:Limit[dBm]=RefLevel [dBm]-20;

Test Graphs





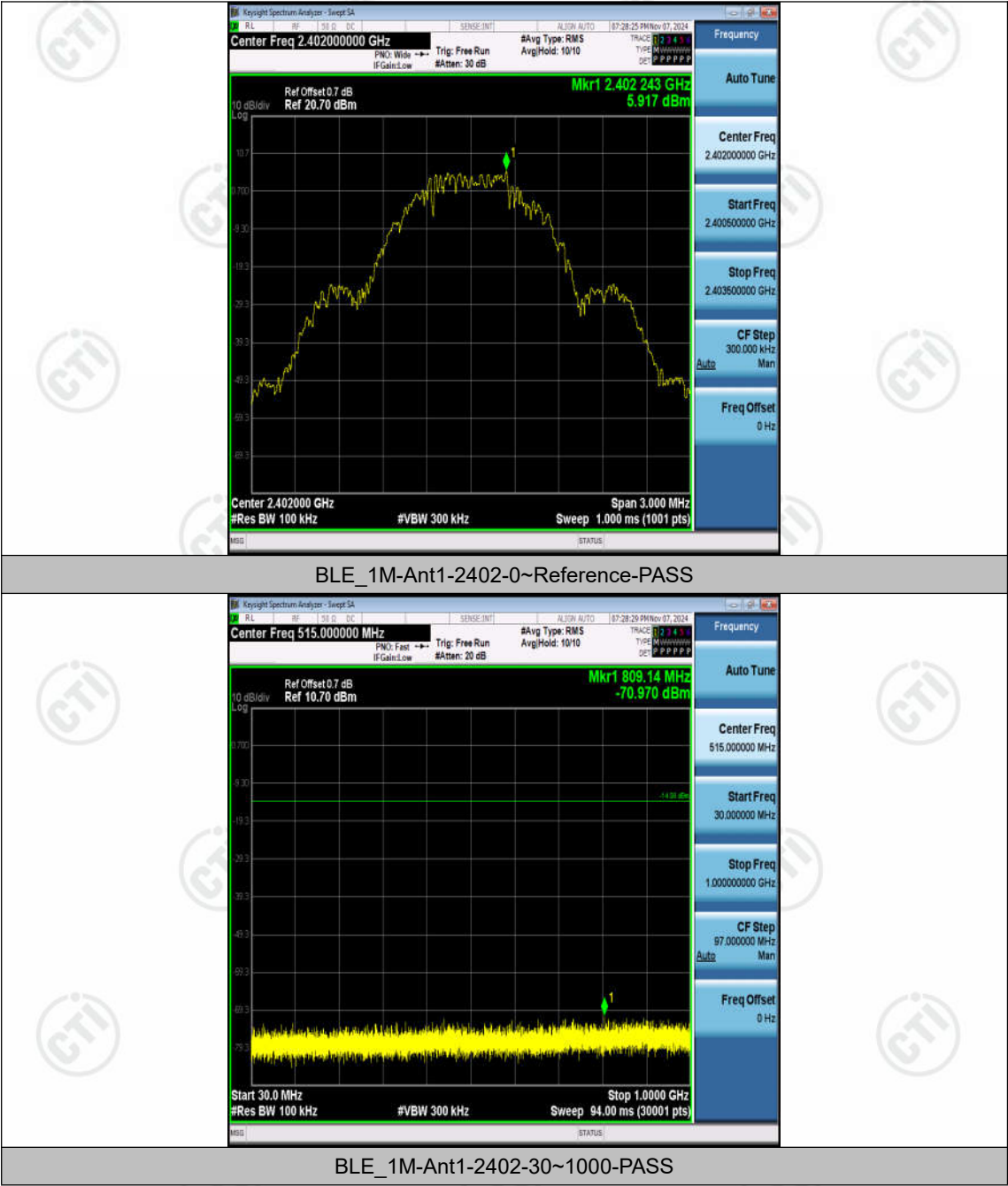
Appendix F: Conducted Spurious Emission

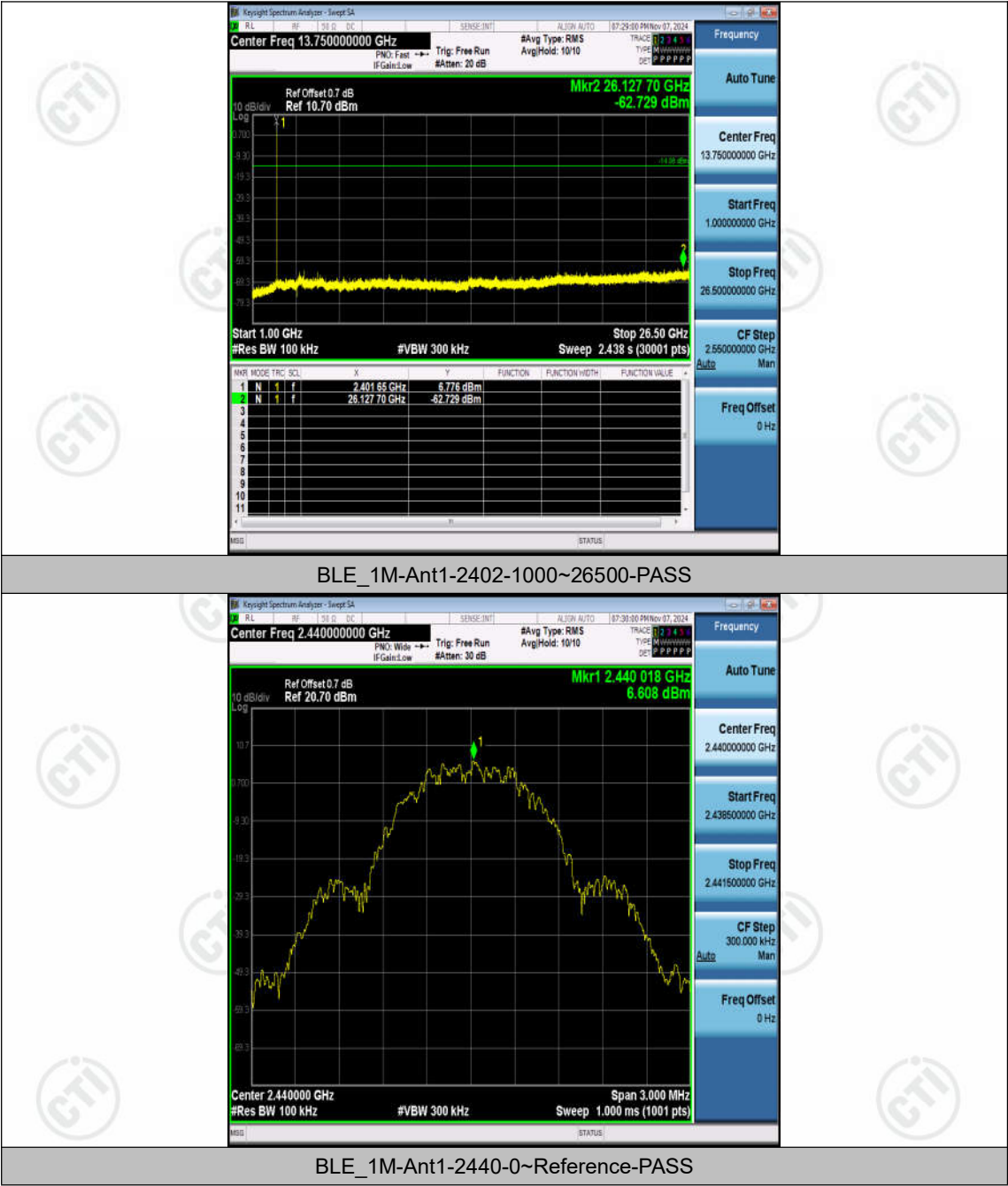
Test Result

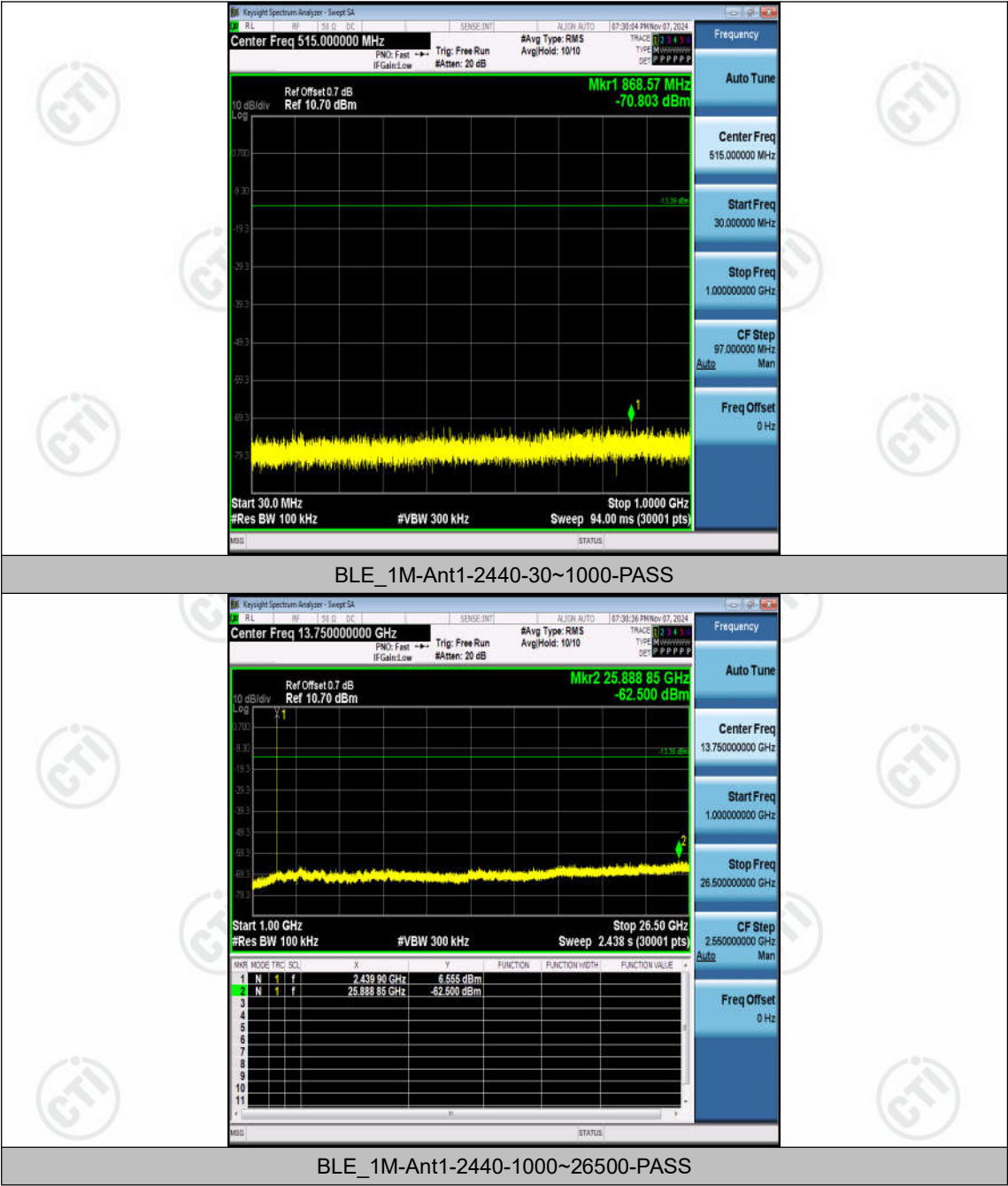
Test Mode	Antenna	Frequency [MHz]	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
BLE_1M	Ant1	2402	0~Reference	5.92	5.92	---	PASS
BLE_1M	Ant1	2402	30~1000	5.92	-70.97	≤-14.08	PASS
BLE_1M	Ant1	2402	1000~26500	5.92	-62.73	≤-14.08	PASS
BLE_1M	Ant1	2440	0~Reference	6.61	6.61	---	PASS
BLE_1M	Ant1	2440	30~1000	6.61	-70.8	≤-13.39	PASS
BLE_1M	Ant1	2440	1000~26500	6.61	-62.5	≤-13.39	PASS
BLE_1M	Ant1	2480	0~Reference	6.45	6.45	---	PASS
BLE_1M	Ant1	2480	30~1000	6.45	-70.79	≤-13.55	PASS
BLE_1M	Ant1	2480	1000~26500	6.45	-62.9	≤-13.55	PASS
BLE_2M	Ant1	2402	0~Reference	4.92	4.92	---	PASS
BLE_2M	Ant1	2402	30~1000	4.92	-71.05	≤-15.08	PASS
BLE_2M	Ant1	2402	1000~26500	4.92	-62.46	≤-15.08	PASS
BLE_2M	Ant1	2440	0~Reference	4.51	4.51	---	PASS
BLE_2M	Ant1	2440	30~1000	4.51	-71.53	≤-15.49	PASS
BLE_2M	Ant1	2440	1000~26500	4.51	-62.85	≤-15.49	PASS
BLE_2M	Ant1	2480	0~Reference	4.10	4.10	---	PASS
BLE_2M	Ant1	2480	30~1000	4.10	-70.67	≤-15.9	PASS
BLE_2M	Ant1	2480	1000~26500	4.10	-62.29	≤-15.9	PASS

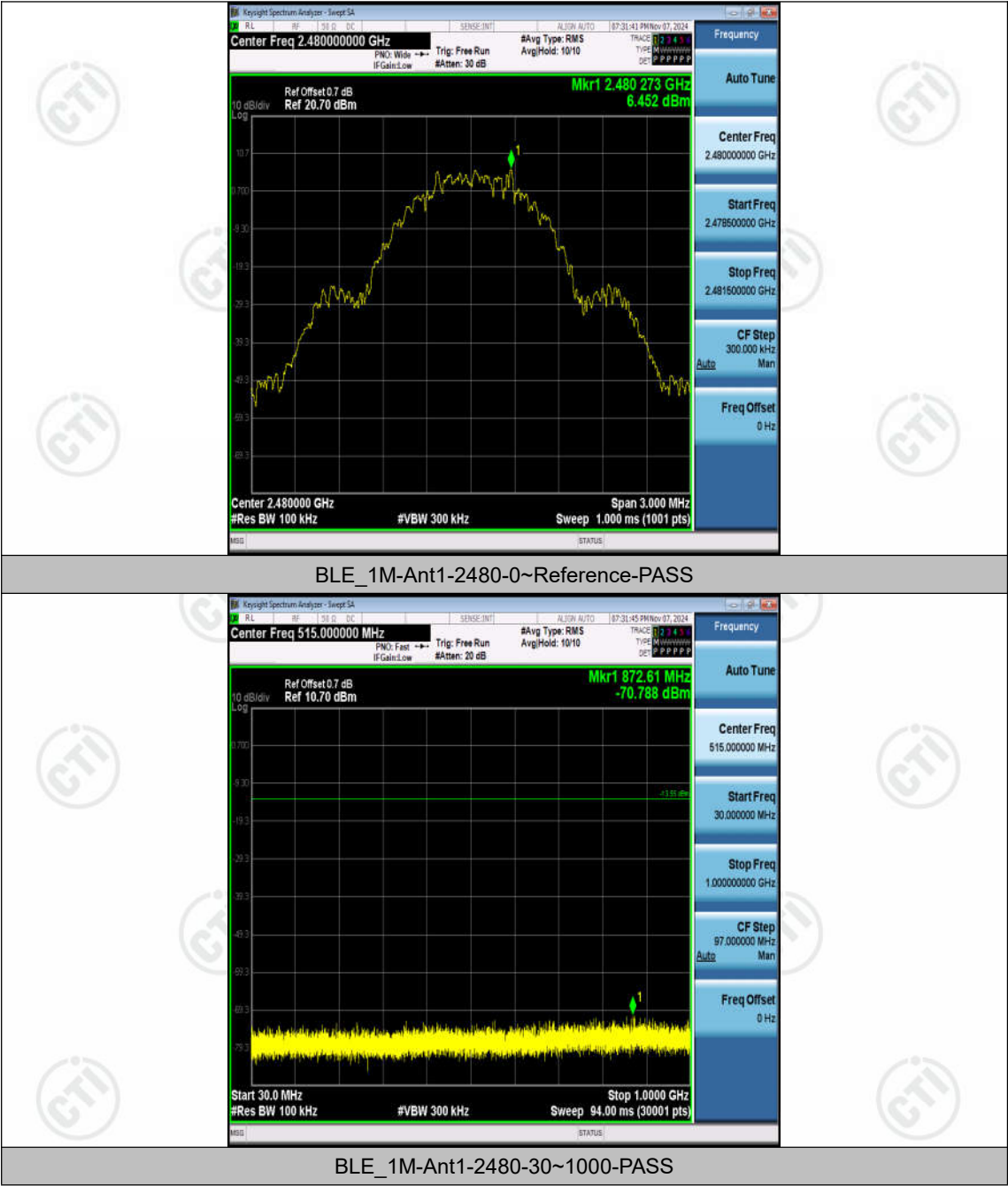
Note:Limit[dBm]=RefLevel[dBm]-20;

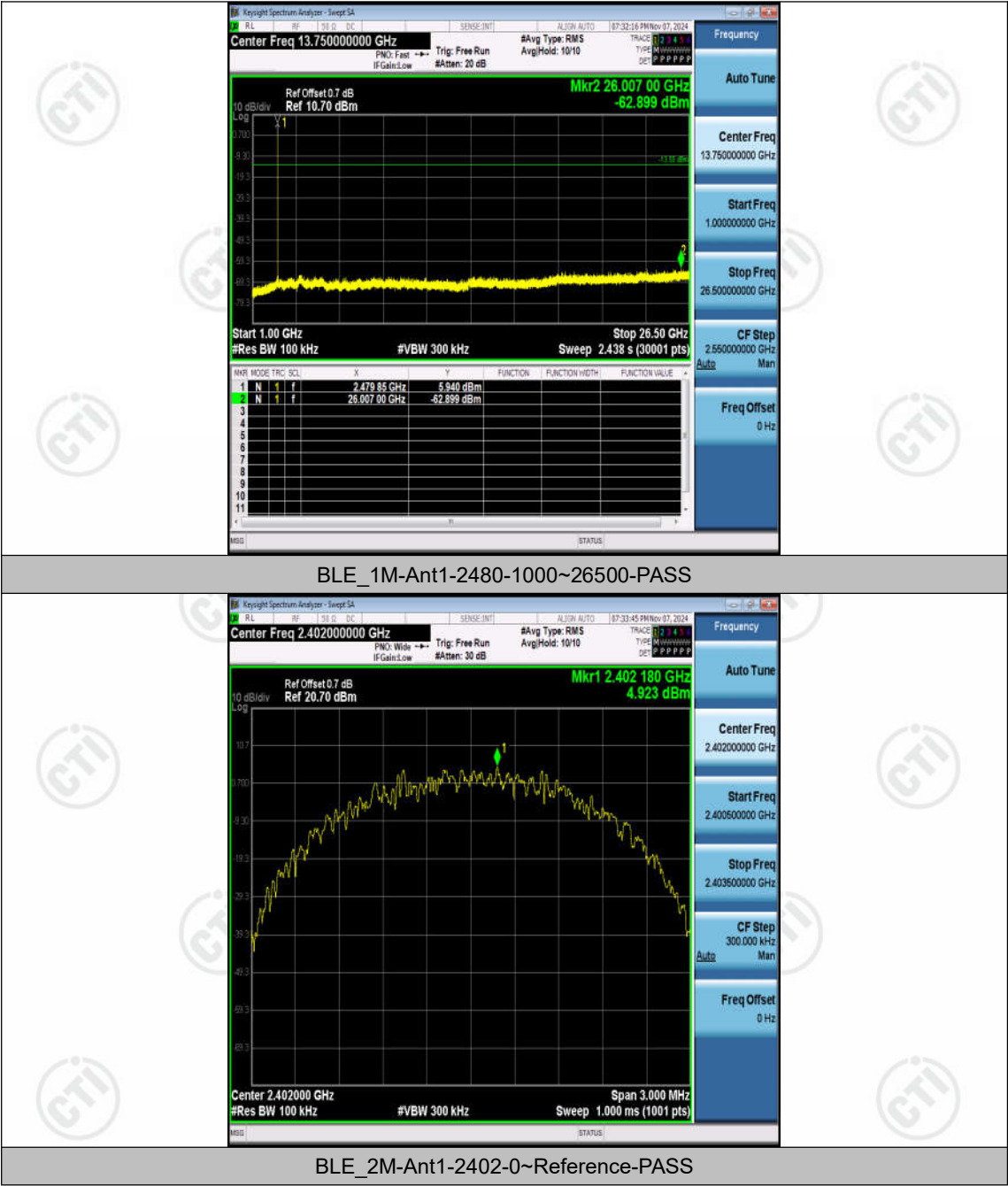
Test Graphs

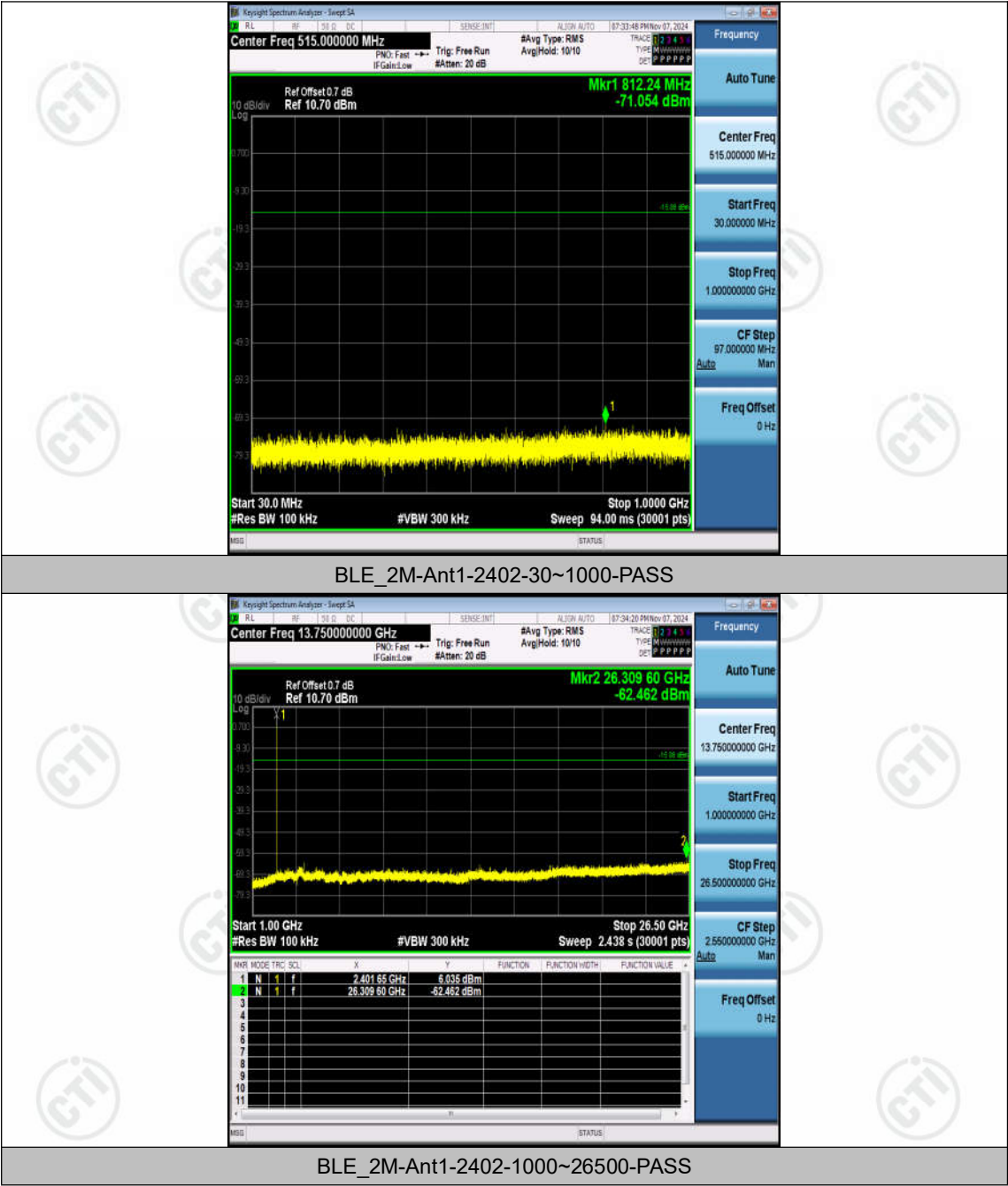


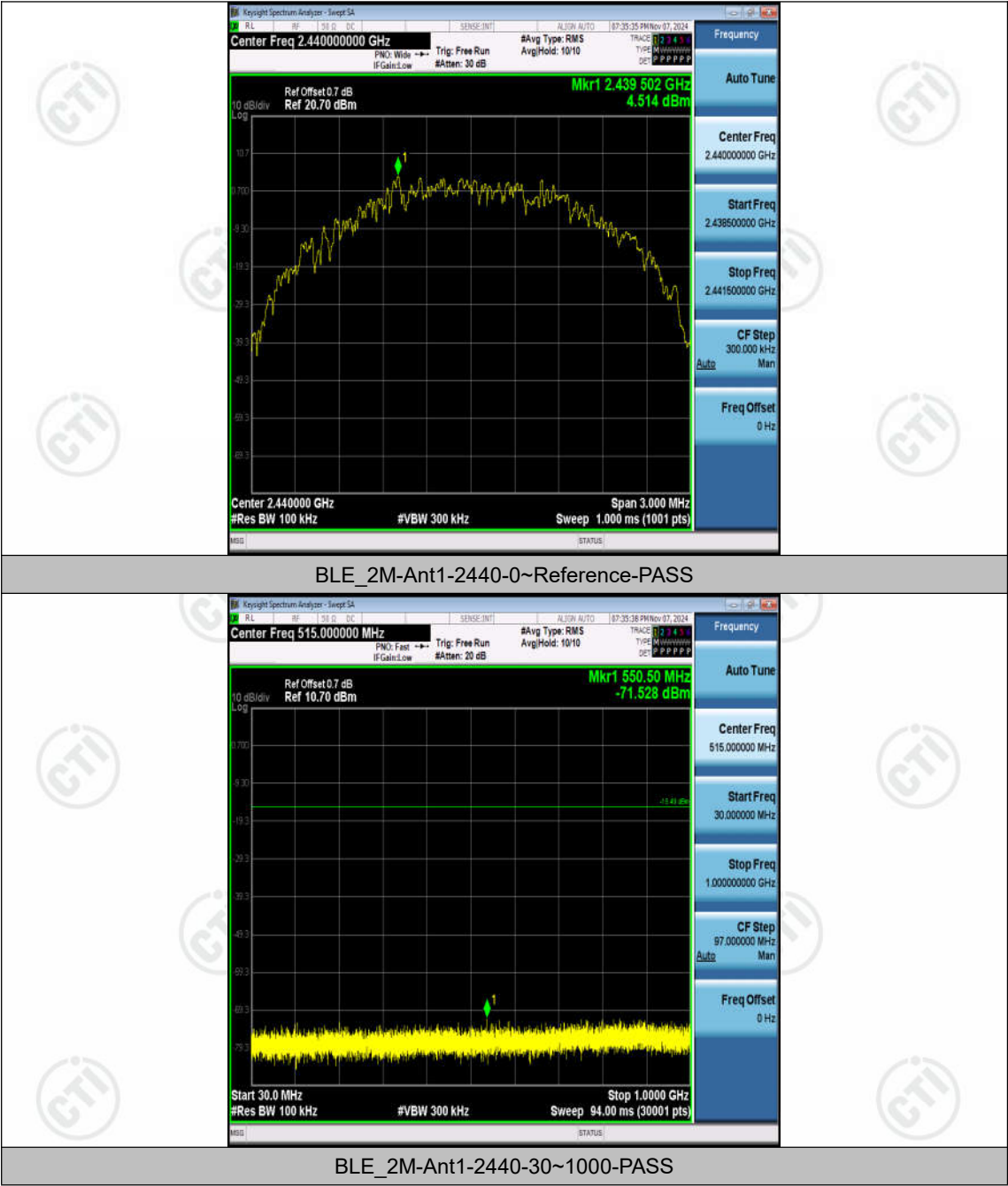


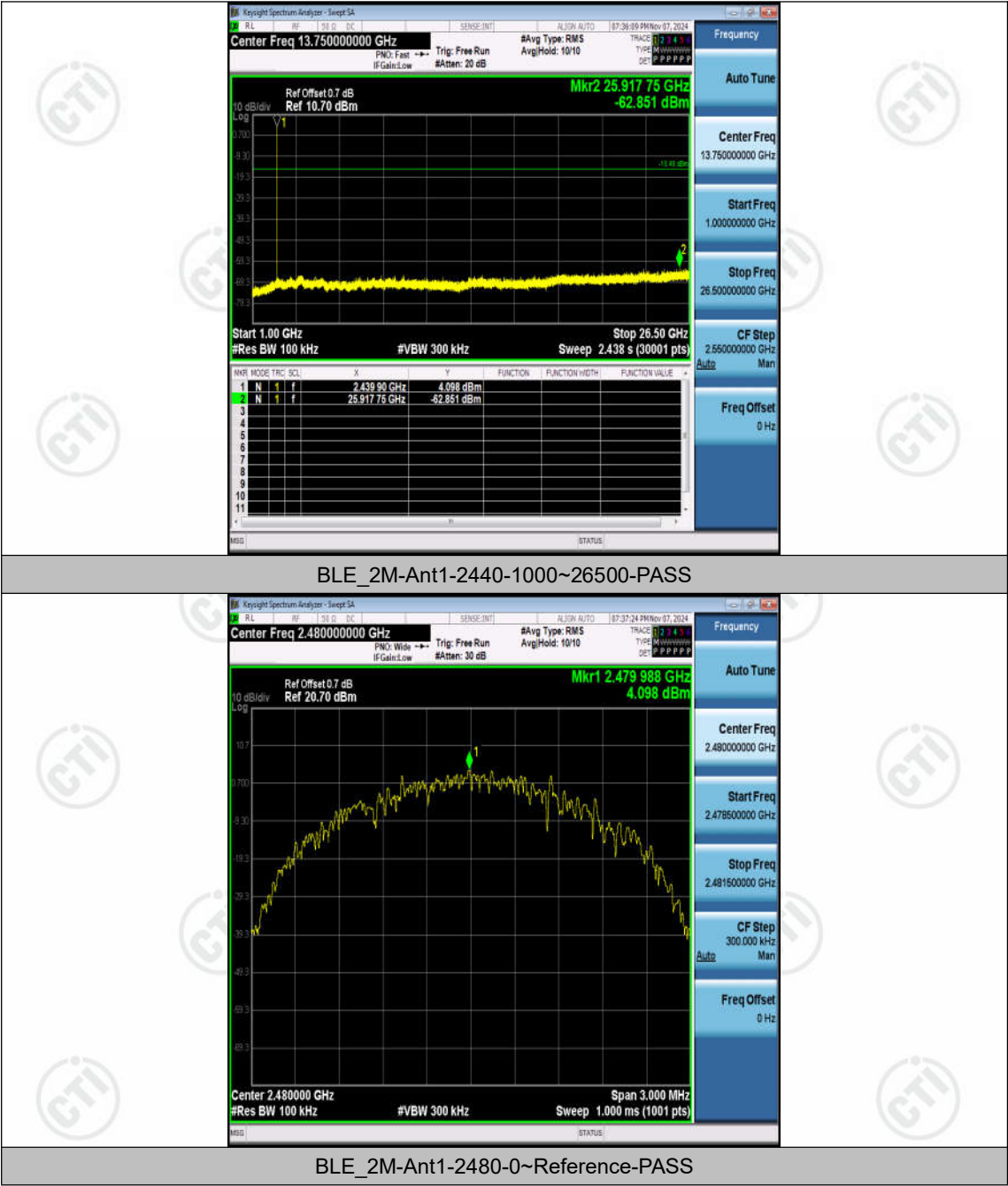


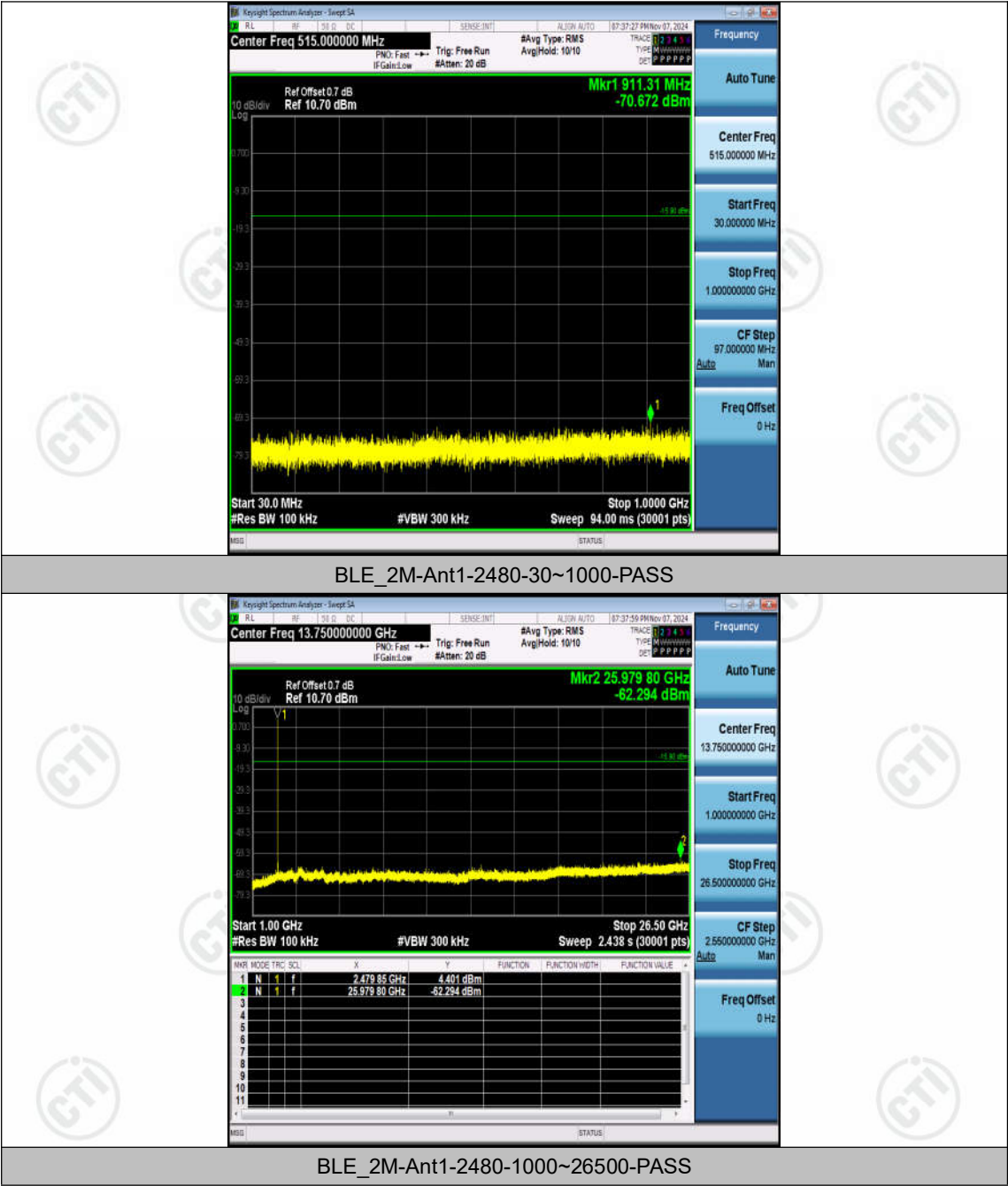












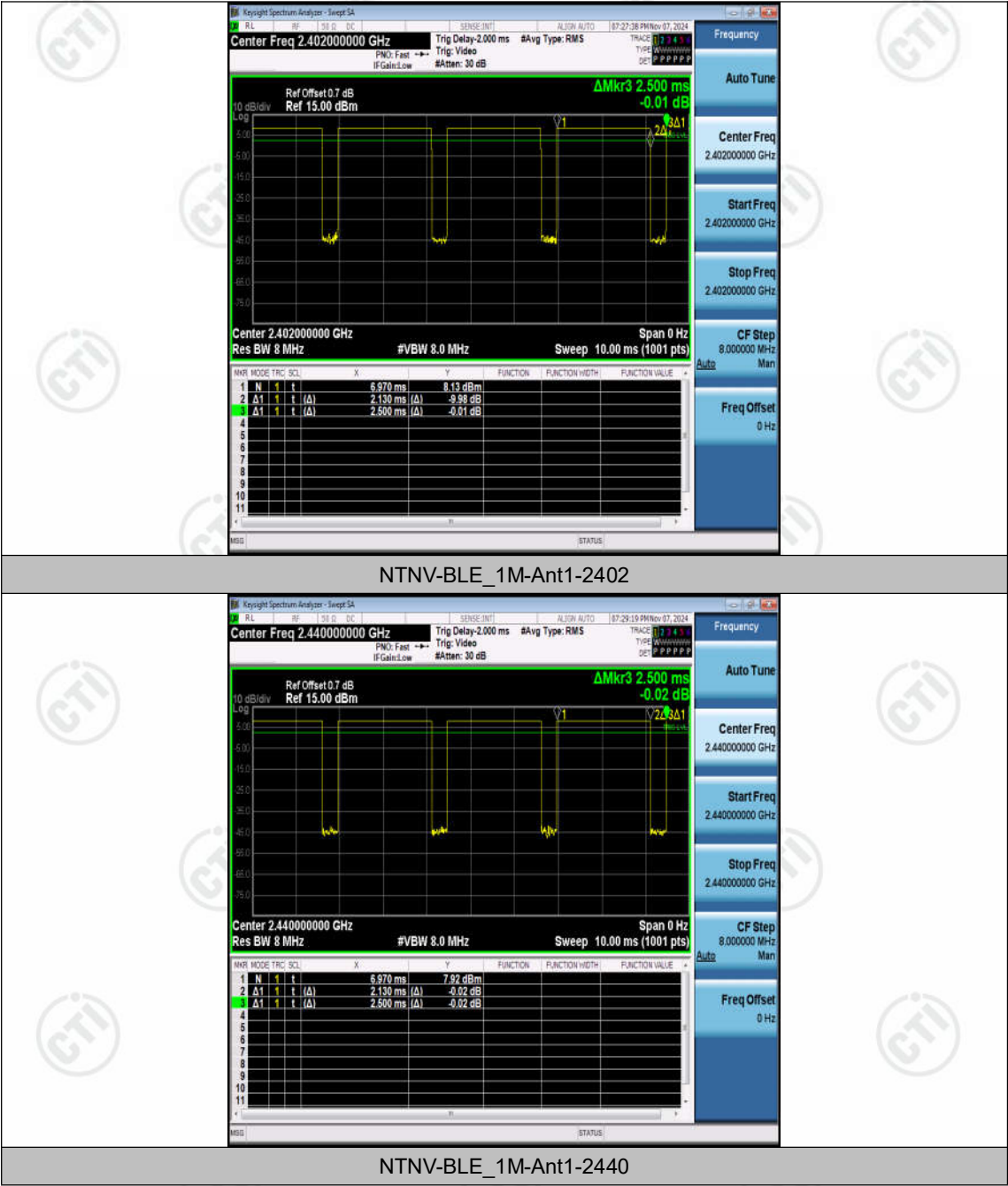
Appendix G: Duty Cycle

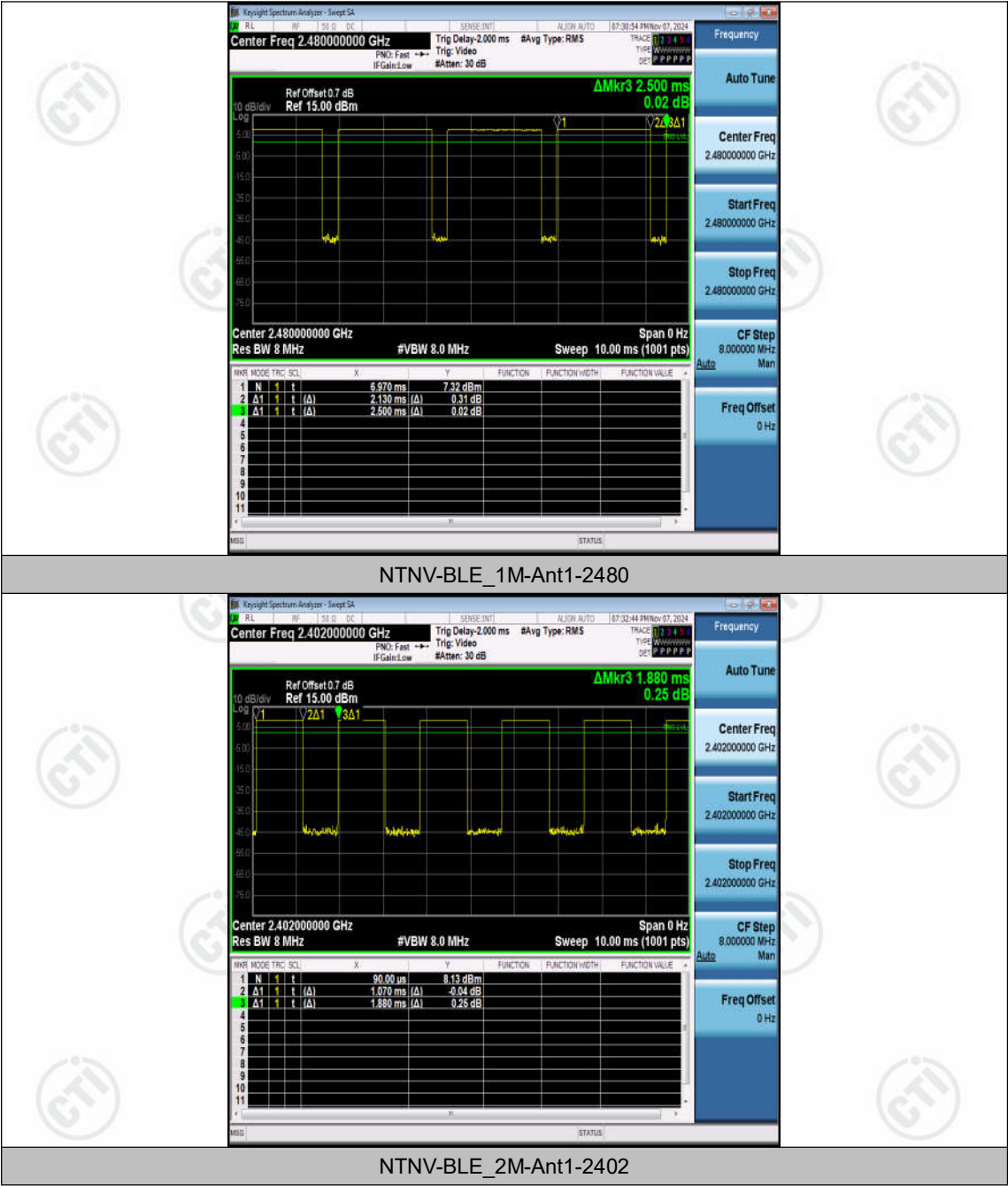
Test Result

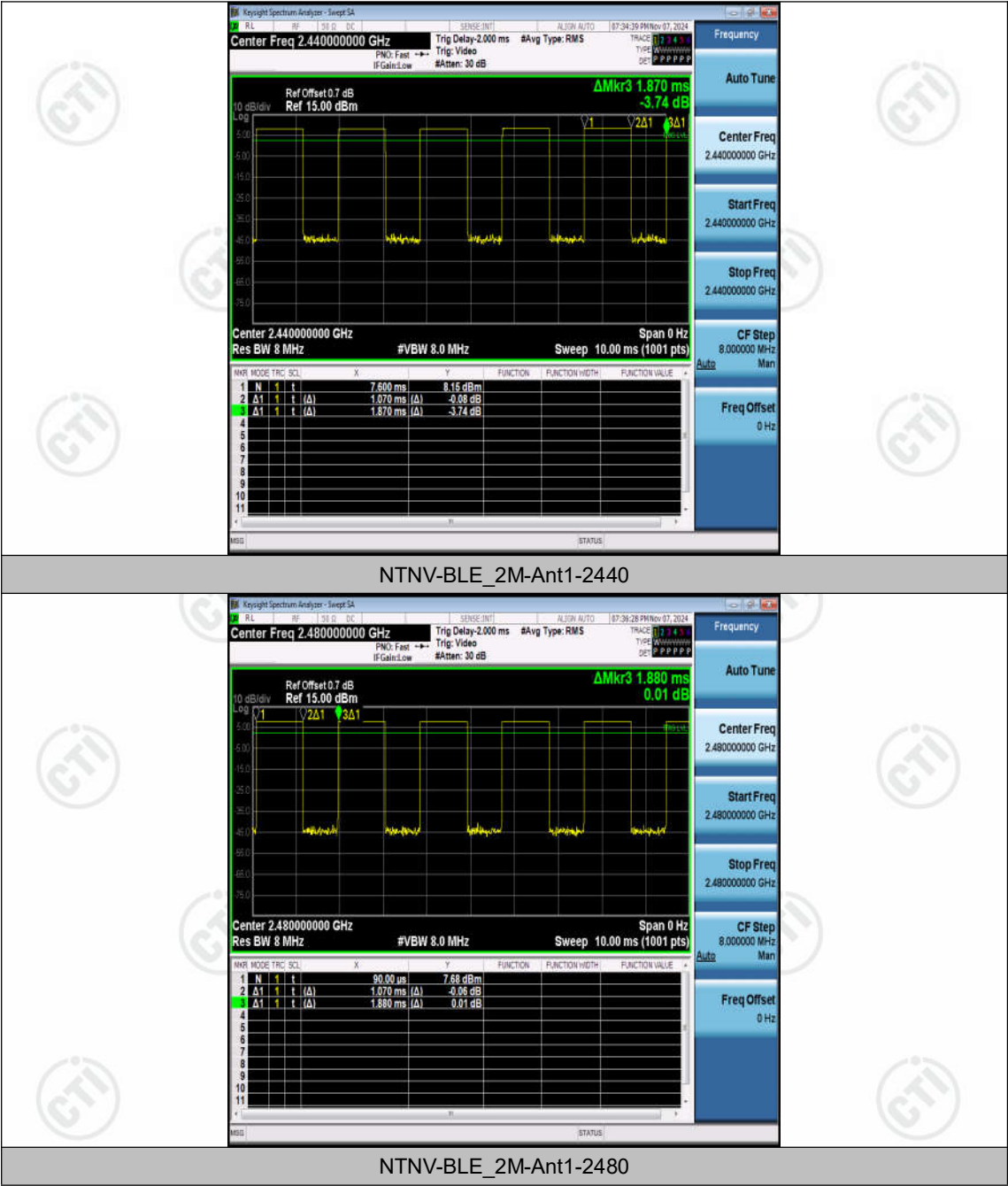
Test Mode	Antenna	Frequency [MHz]	ON Time [ms]	Period [ms]	Duty Cycle [%]	Duty Cycle Factor [dB]
BLE_1M	Ant1	2402	2.13	2.50	85.20	0.70
BLE_1M	Ant1	2440	2.13	2.50	85.20	0.70
BLE_1M	Ant1	2480	2.13	2.50	85.20	0.70
BLE_2M	Ant1	2402	1.07	1.88	56.91	2.45
BLE_2M	Ant1	2440	1.07	1.87	57.22	2.42
BLE_2M	Ant1	2480	1.07	1.88	56.91	2.45

Note:Duty Cycle Factor[dB]=-10*Ig(Duty Cycle[%]*100);

Test Graphs







END OF REPORT