

Appendix: Bluetooth LE

Contents

Appendix A: DTS Bandwidth.....	3
Test Result.....	3
Test Graphs.....	4
Appendix B: Occupied Channel Bandwidth.....	10
Test Result.....	10
Test Graphs.....	11
Appendix C: Maximum conducted output power.....	17
Test Result.....	17
Test Graphs.....	18
Appendix D: Maximum power spectral density.....	24
Test Result.....	24
Test Graphs.....	25
Appendix F: Band edge measurements.....	31
Test Result.....	31
Test Graphs.....	32
Appendix G: Conducted Spurious Emission.....	36
Test Result.....	36
Test Graphs.....	38
Appendix H: Duty Cycle.....	56
Test Result.....	56
Test Graphs.....	57

Appendix A: DTS Bandwidth

Test Result

Left:

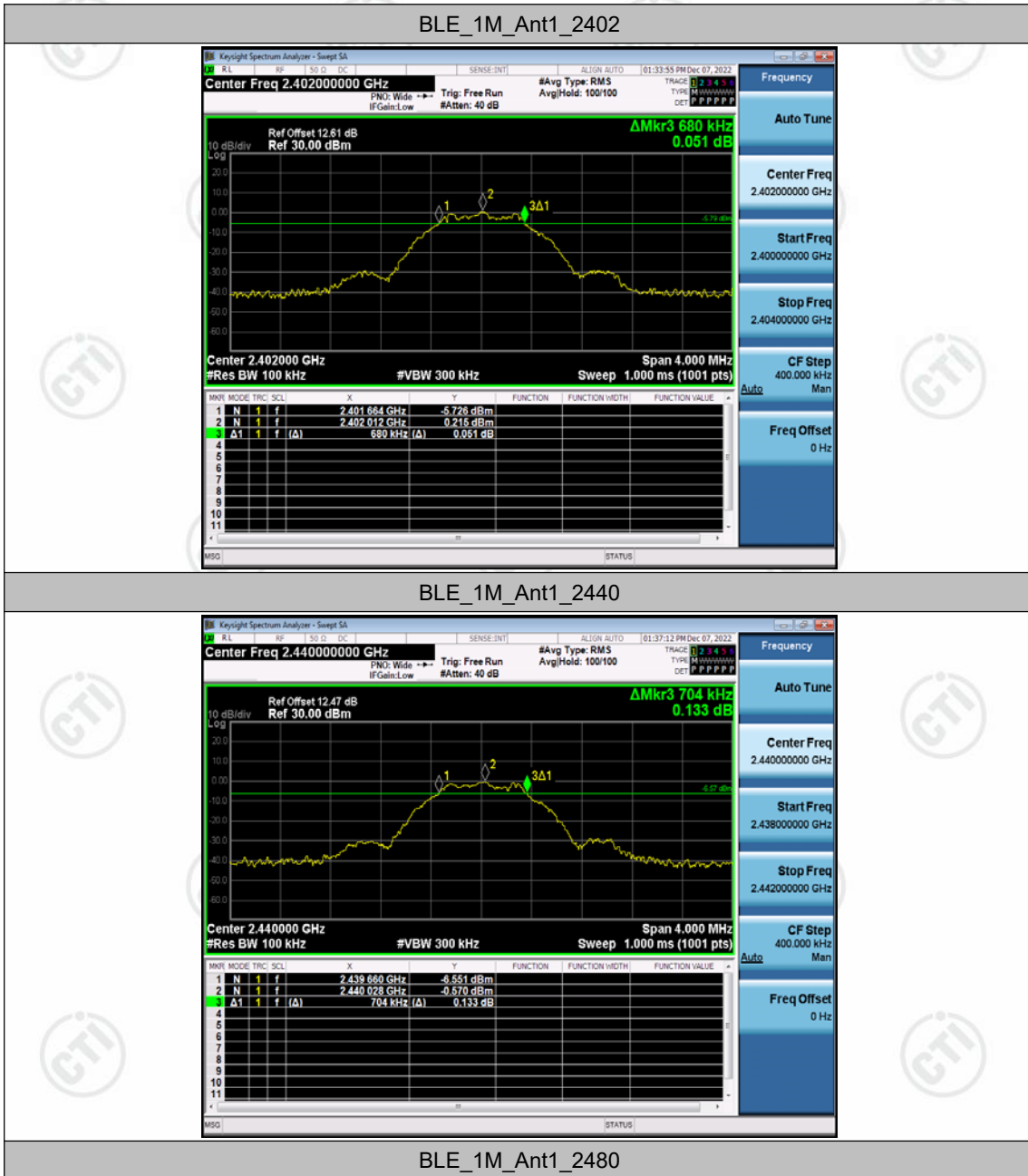
Test Mode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.680	2401.664	2402.344	0.5	PASS
		2440	0.704	2439.660	2440.364	0.5	PASS
		2480	0.680	2479.672	2480.352	0.5	PASS
BLE_2M	Ant1	2402	1.120	2401.456	2402.576	0.5	PASS
		2440	1.100	2439.464	2440.564	0.5	PASS
		2480	1.096	2479.468	2480.564	0.5	PASS

Right:

Test Mode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.680	2401.664	2402.344	0.5	PASS
		2440	0.716	2439.648	2440.364	0.5	PASS
		2480	0.724	2479.640	2480.364	0.5	PASS
BLE_2M	Ant1	2402	1.128	2401.460	2402.588	0.5	PASS
		2440	1.132	2439.452	2440.584	0.5	PASS
		2480	1.140	2479.436	2480.576	0.5	PASS

Test Graphs

Left:





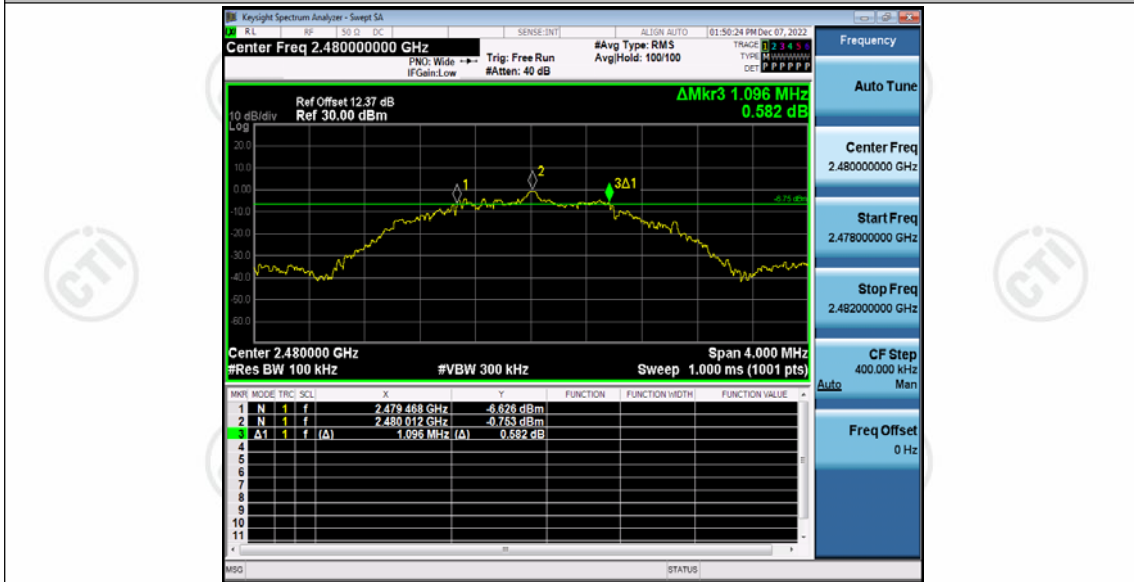
BLE_2M_Ant1_2402



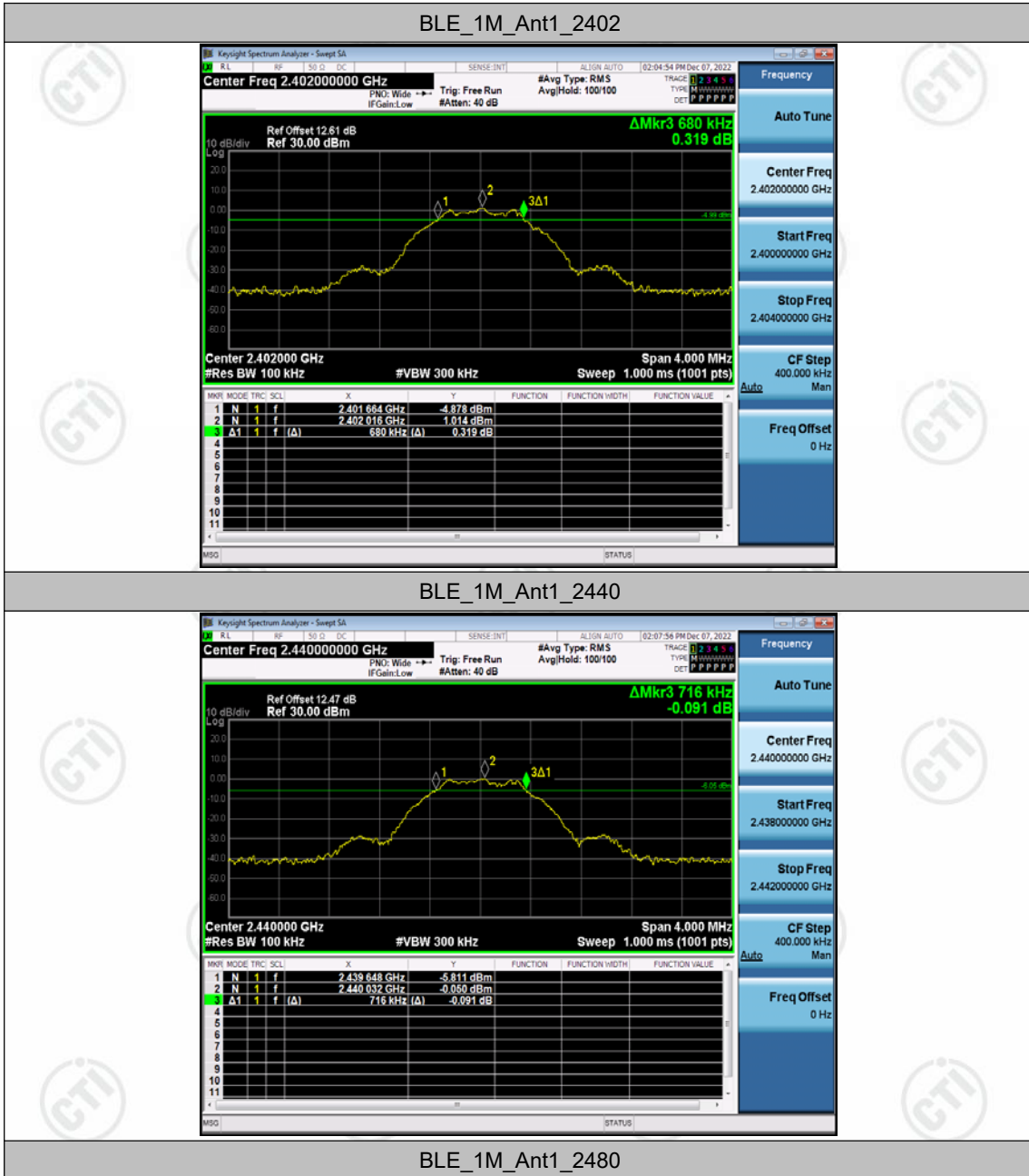
BLE_2M_Ant1_2440

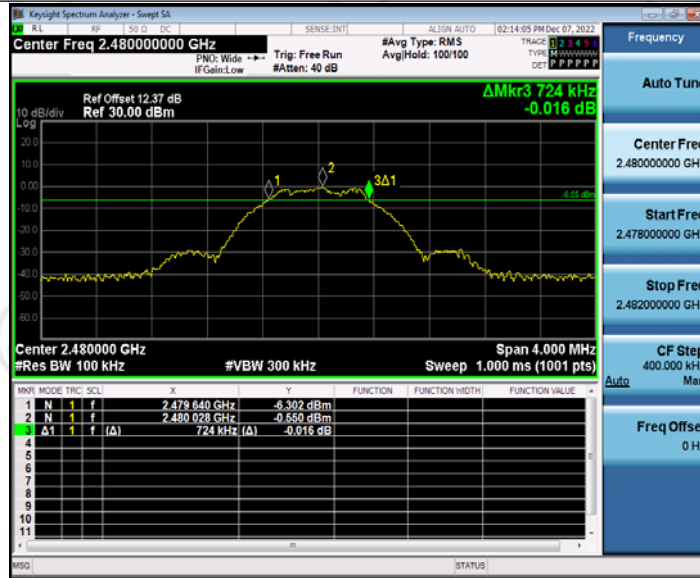


BLE_2M_Ant1_2480



Right:





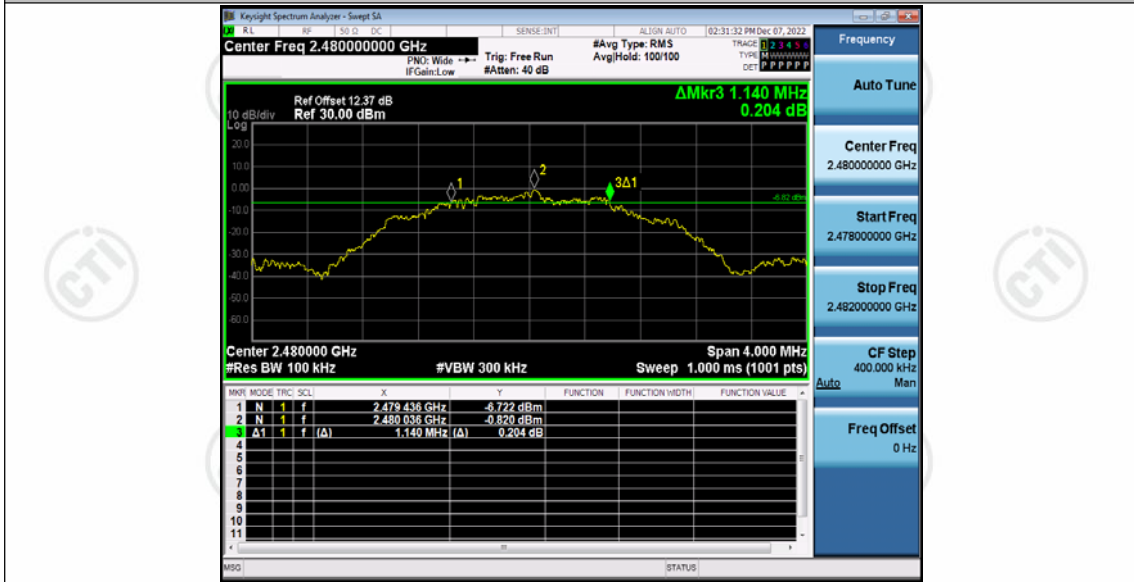
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480



Appendix B: Occupied Channel Bandwidth

Test Result

Left:

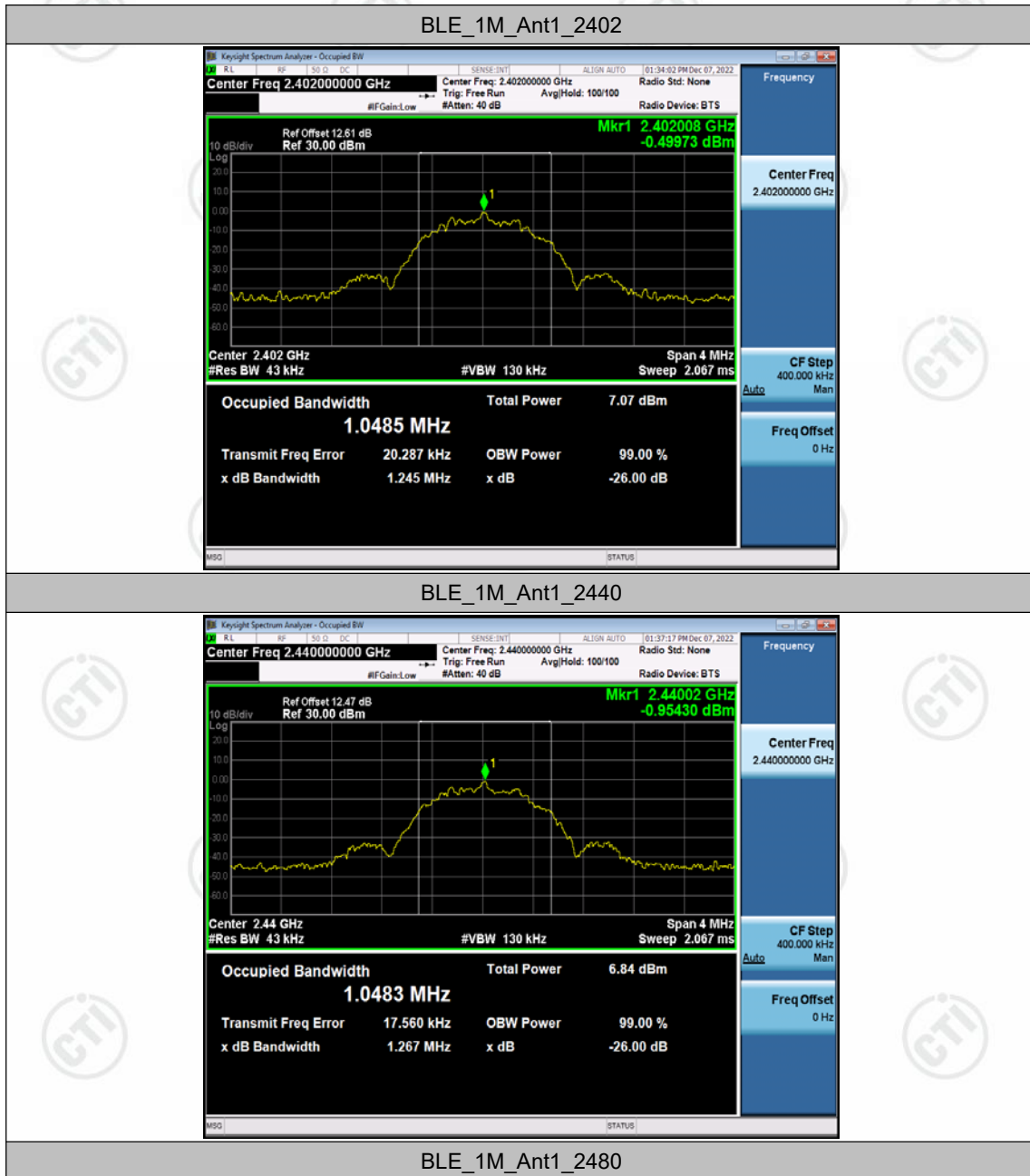
Test Mode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0485	2401.4960	2402.5445	---	---
		2440	1.0483	2439.4934	2440.5417	---	---
		2480	1.0538	2479.4905	2480.5443	---	---
BLE_2M	Ant1	2402	2.0436	2401.0106	2403.0542	---	---
		2440	2.0497	2439.0037	2441.0534	---	---
		2480	2.0712	2478.9932	2481.0644	---	---

Right:

Test Mode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0573	2401.4892	2402.5465	---	---
		2440	1.0509	2439.4899	2440.5408	---	---
		2480	1.0583	2479.4884	2480.5467	---	---
BLE_2M	Ant1	2402	2.0593	2401.0012	2403.0605	---	---
		2440	2.0716	2438.9880	2441.0596	---	---
		2480	2.0669	2478.9946	2481.0615	---	---

Test Graphs

Left:





BLE_2M_Ant1_2402



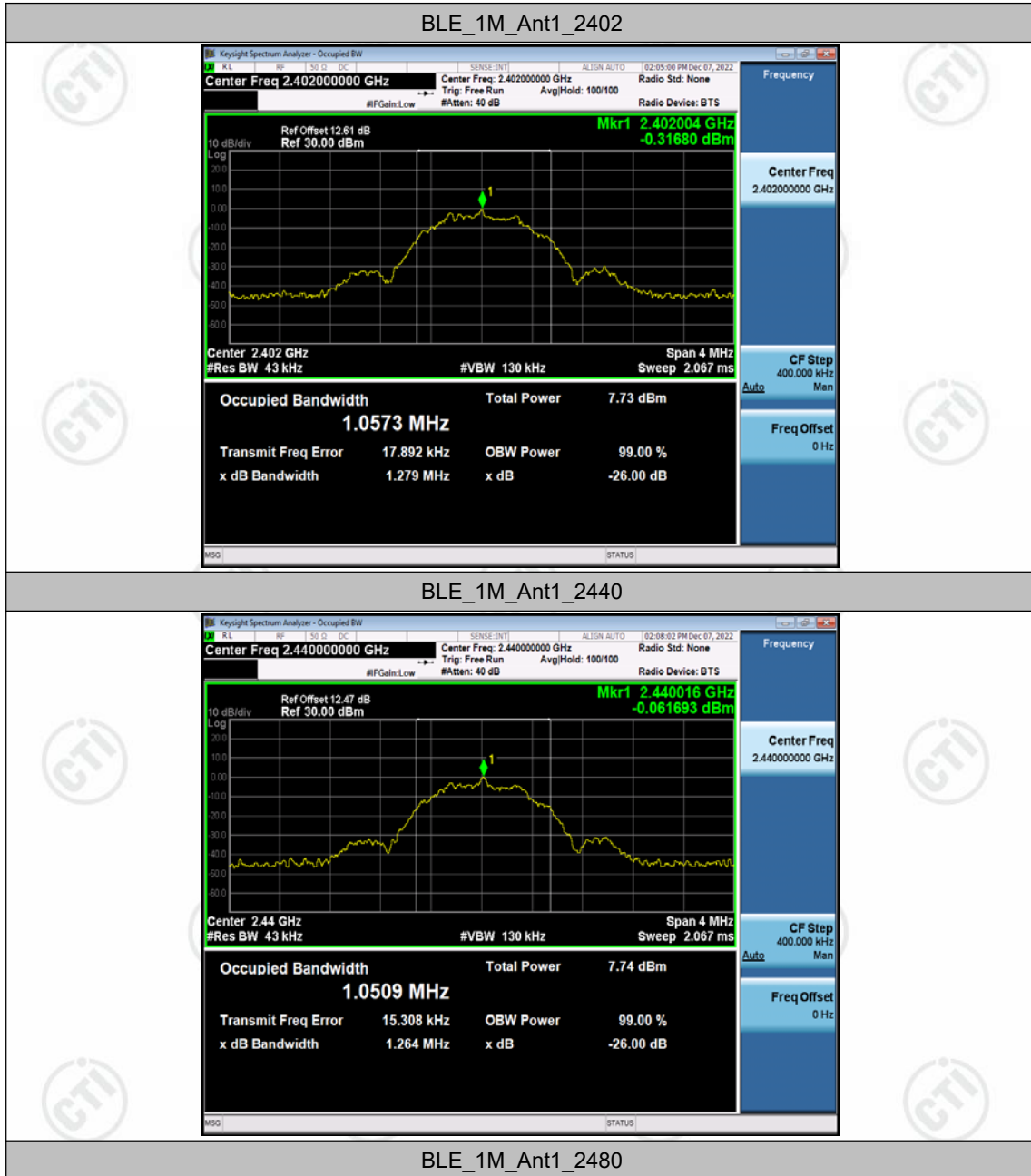
BLE_2M_Ant1_2440



BLE_2M_Ant1_2480



Right:



BLE_1M_Ant1_2480



BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480



Appendix C: Maximum conducted output power**Test Result**

Left:

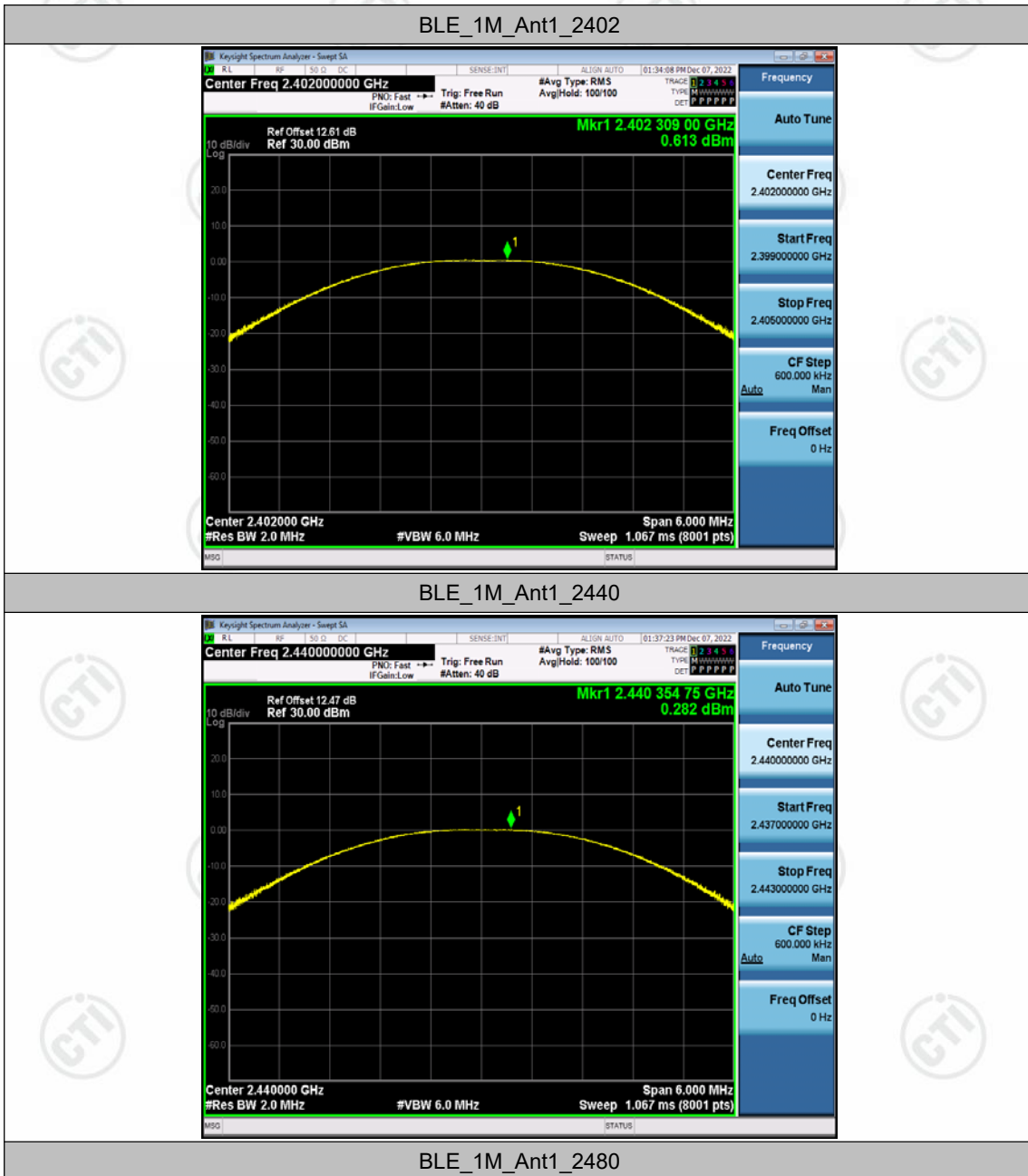
Test Mode	Antenna	Frequency[MHz]	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
BLE_1M	Ant1	2402	0.61	≤30	PASS
		2440	0.28	≤30	PASS
		2480	-0.36	≤30	PASS
BLE_2M	Ant1	2402	0.57	≤30	PASS
		2440	0.31	≤30	PASS
		2480	-0.35	≤30	PASS

Right:

Test Mode	Antenna	Frequency[MHz]	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
BLE_1M	Ant1	2402	1.37	≤30	PASS
		2440	0.95	≤30	PASS
		2480	0.53	≤30	PASS
BLE_2M	Ant1	2402	1.33	≤30	PASS
		2440	0.97	≤30	PASS
		2480	0.51	≤30	PASS

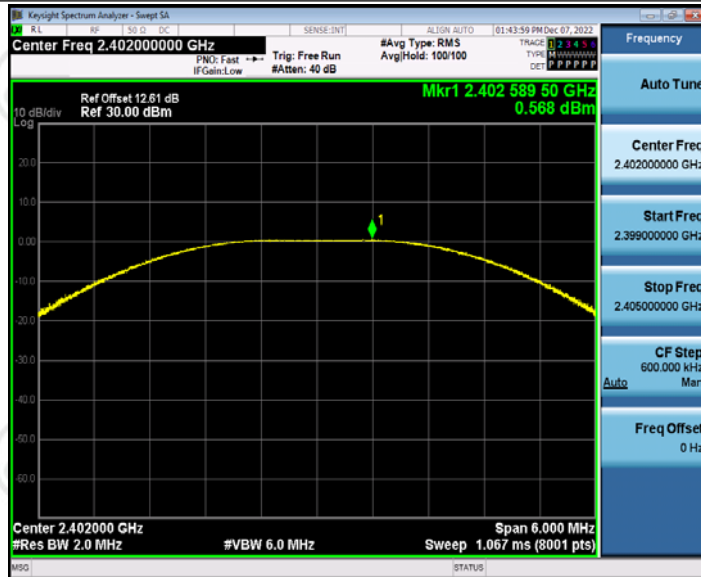
Test Graphs

Left:

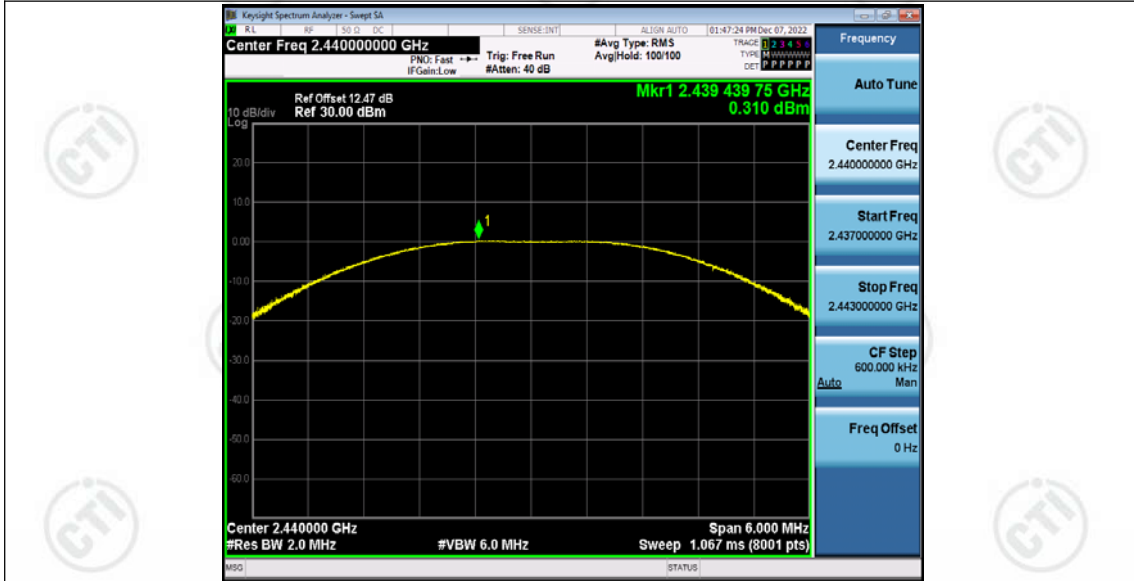




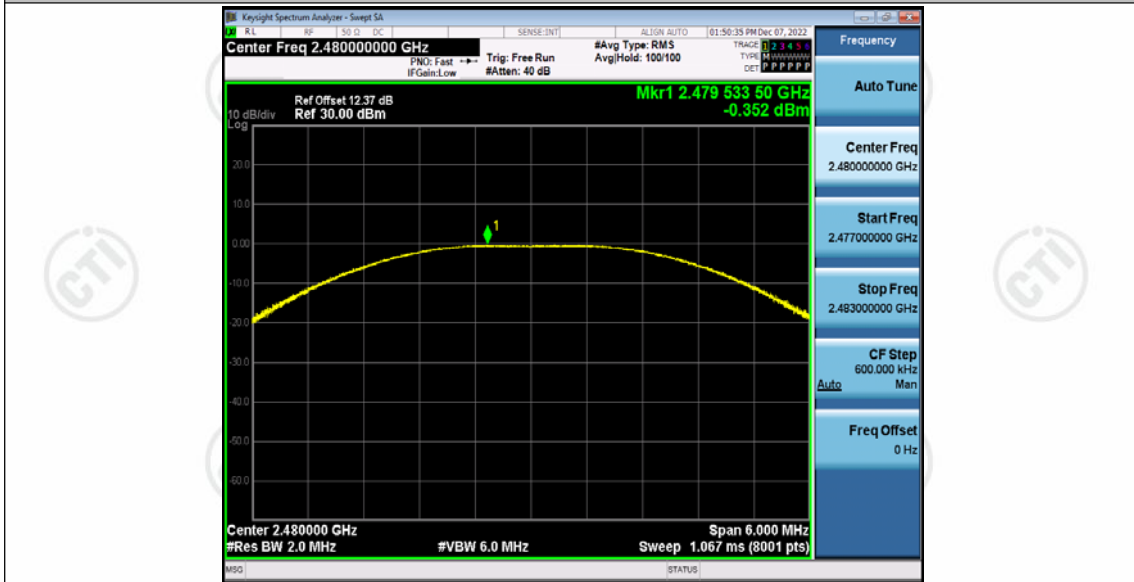
BLE_2M_Ant1_2402



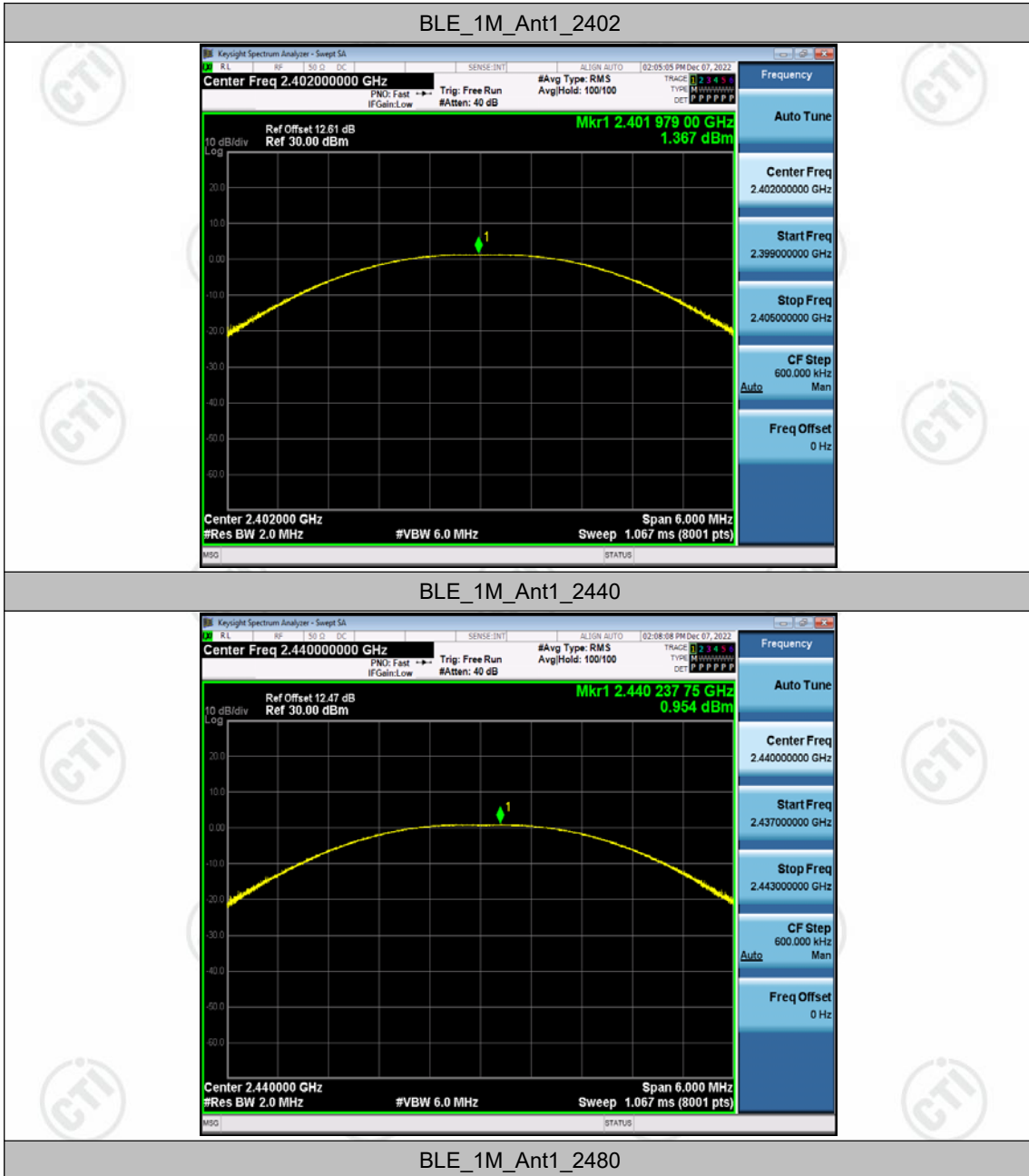
BLE_2M_Ant1_2440

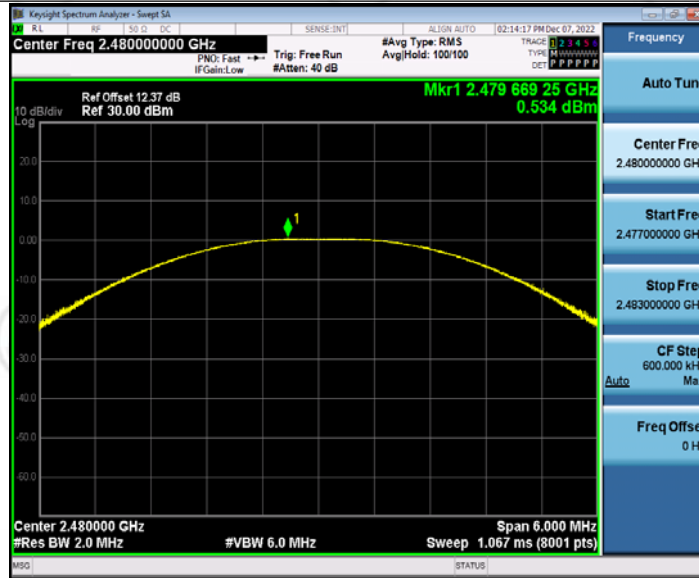


BLE_2M_Ant1_2480



Right:

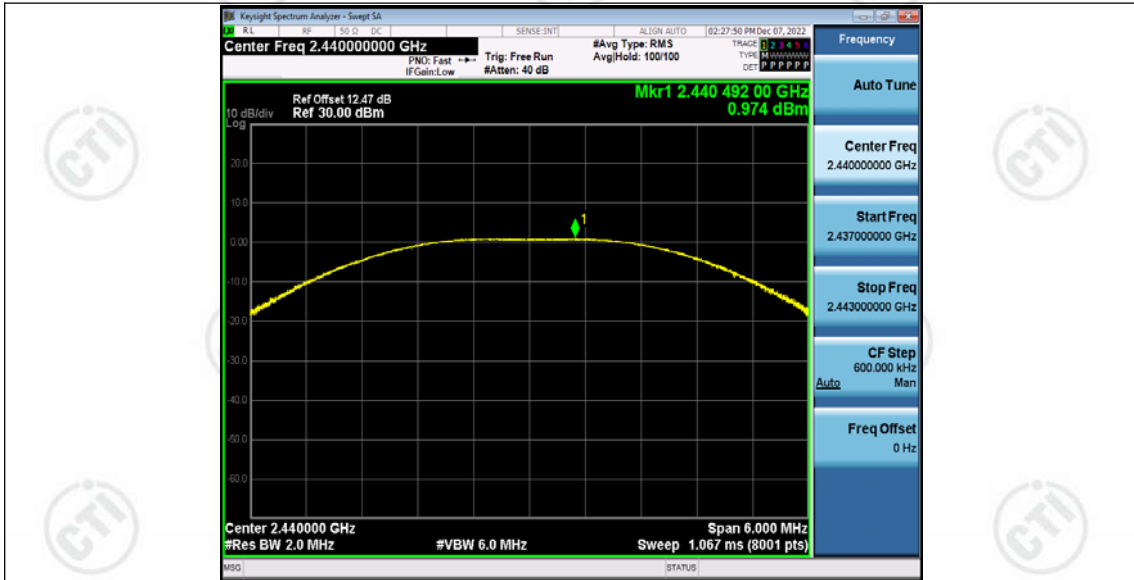




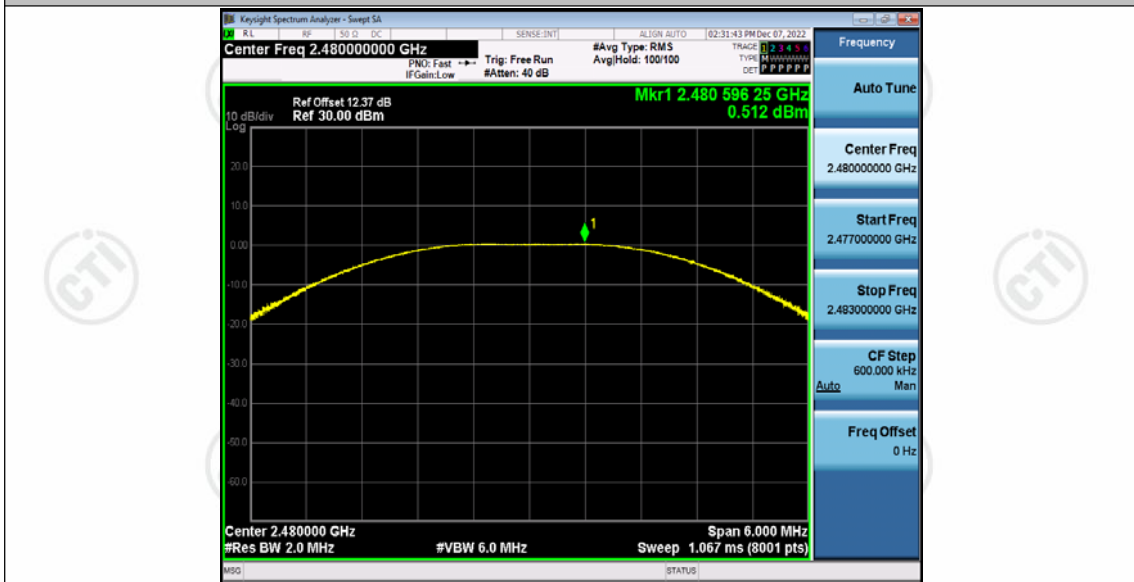
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480



Appendix D: Maximum power spectral density**Test Result**

Left:

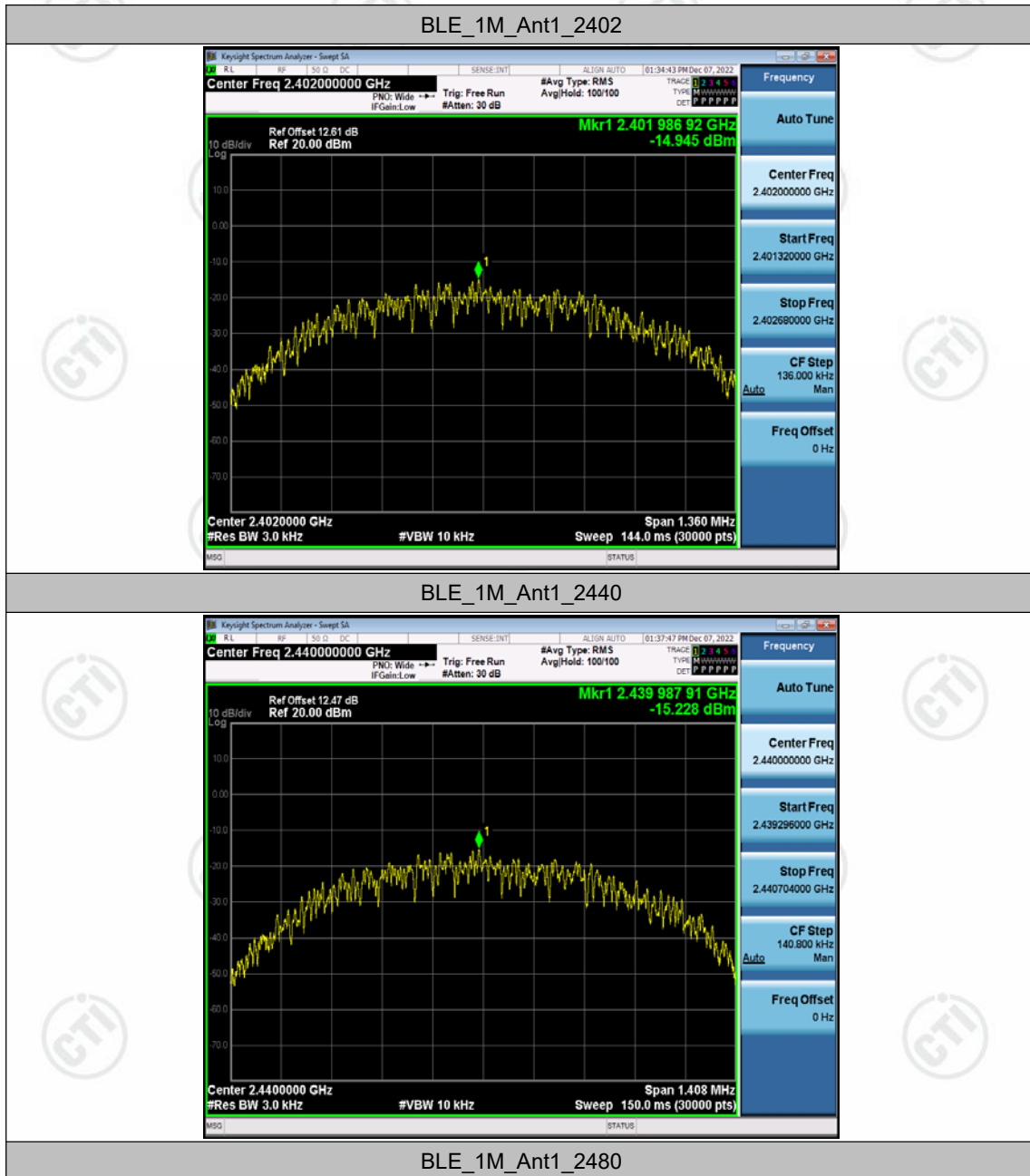
Test Mode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-14.95	≤8.00	PASS
		2440	-15.23	≤8.00	PASS
		2480	-15.98	≤8.00	PASS
BLE_2M	Ant1	2402	-17.49	≤8.00	PASS
		2440	-17.77	≤8.00	PASS
		2480	-18.46	≤8.00	PASS

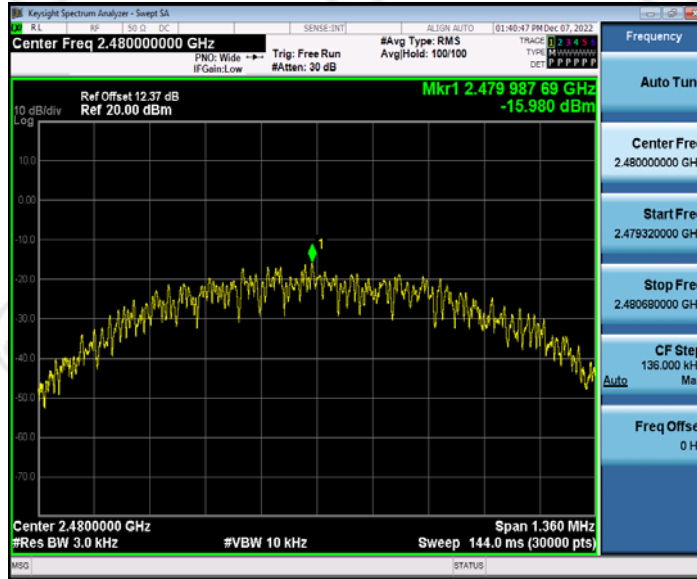
Right:

Test Mode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-14.35	≤8.00	PASS
		2440	-14.77	≤8.00	PASS
		2480	-15.28	≤8.00	PASS
BLE_2M	Ant1	2402	-16.71	≤8.00	PASS
		2440	-17.17	≤8.00	PASS
		2480	-17.66	≤8.00	PASS

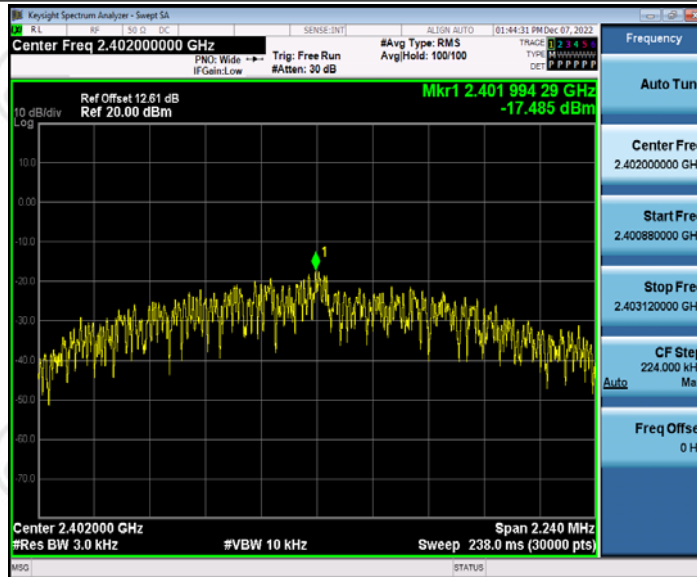
Test Graphs

Left:

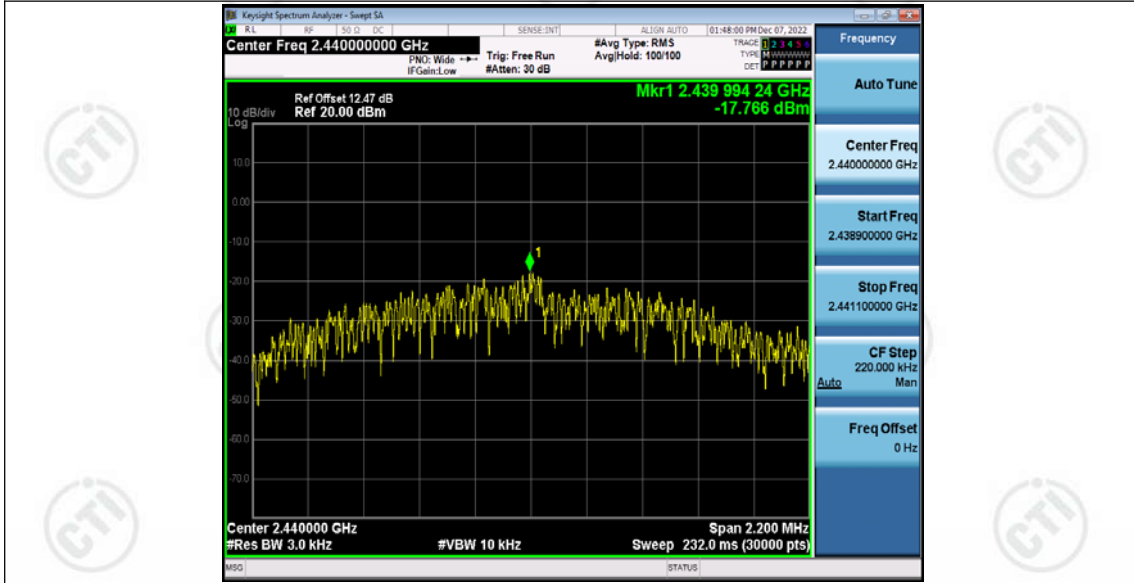




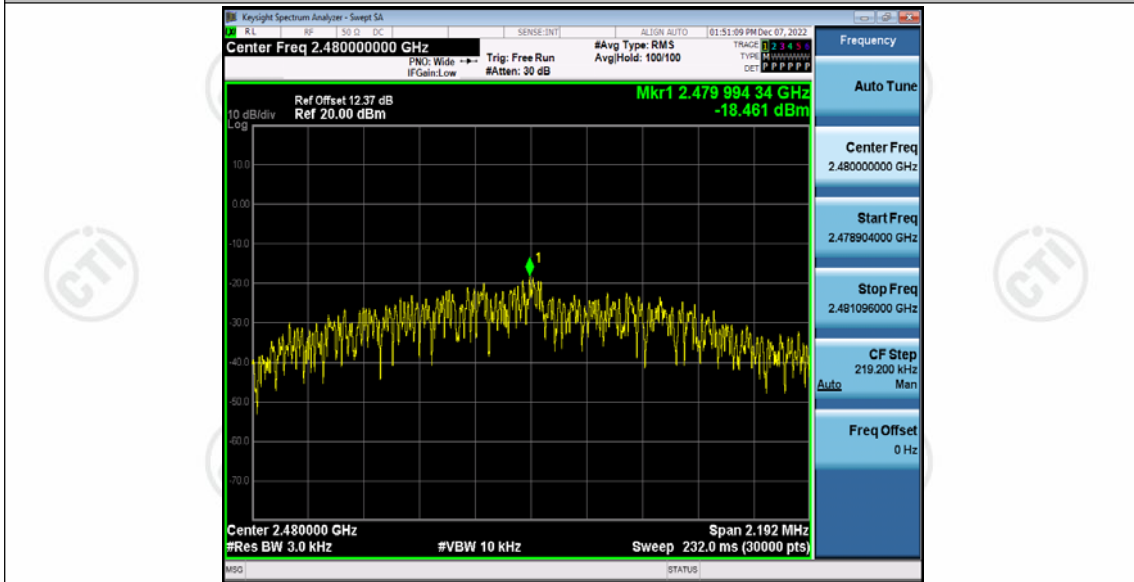
BLE_2M_Ant1_2402



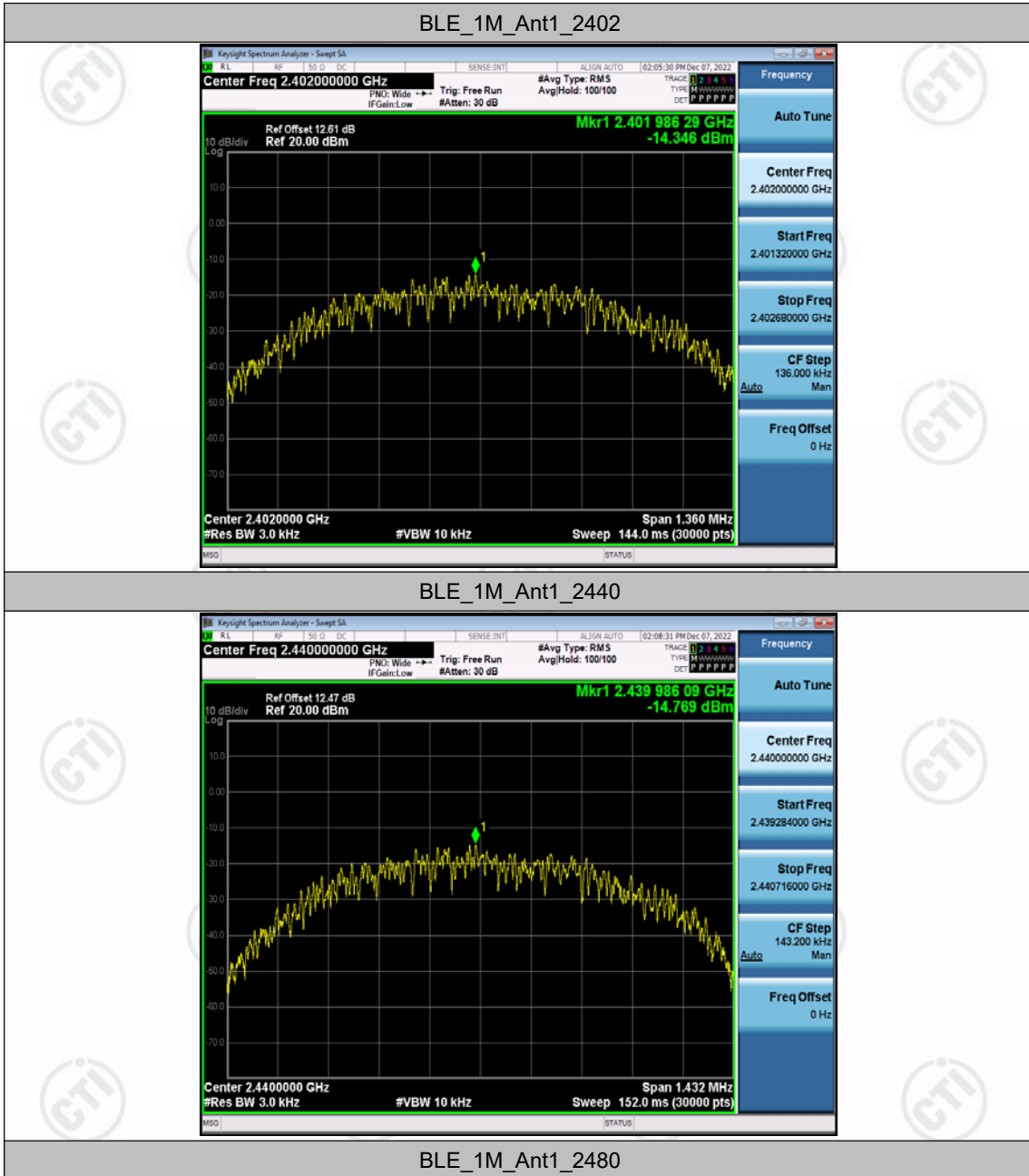
BLE_2M_Ant1_2440



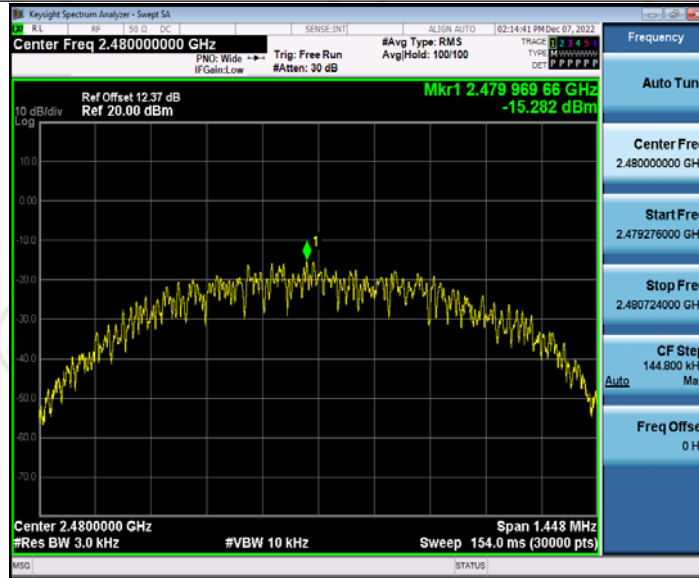
BLE_2M_Ant1_2480



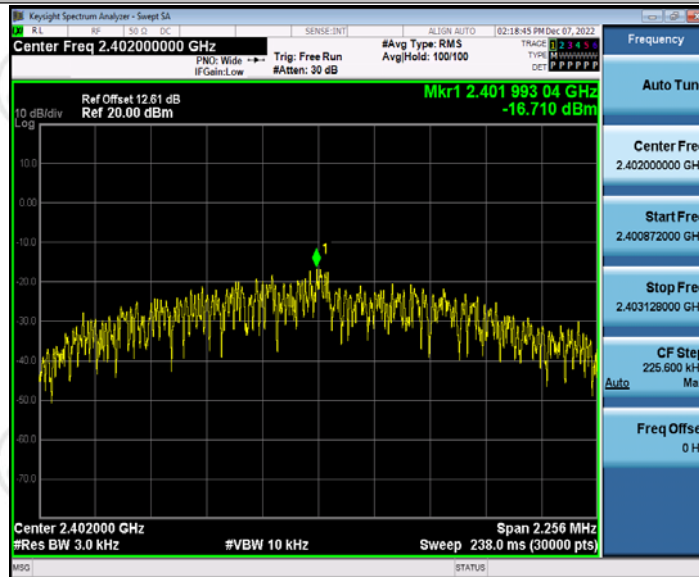
Right:



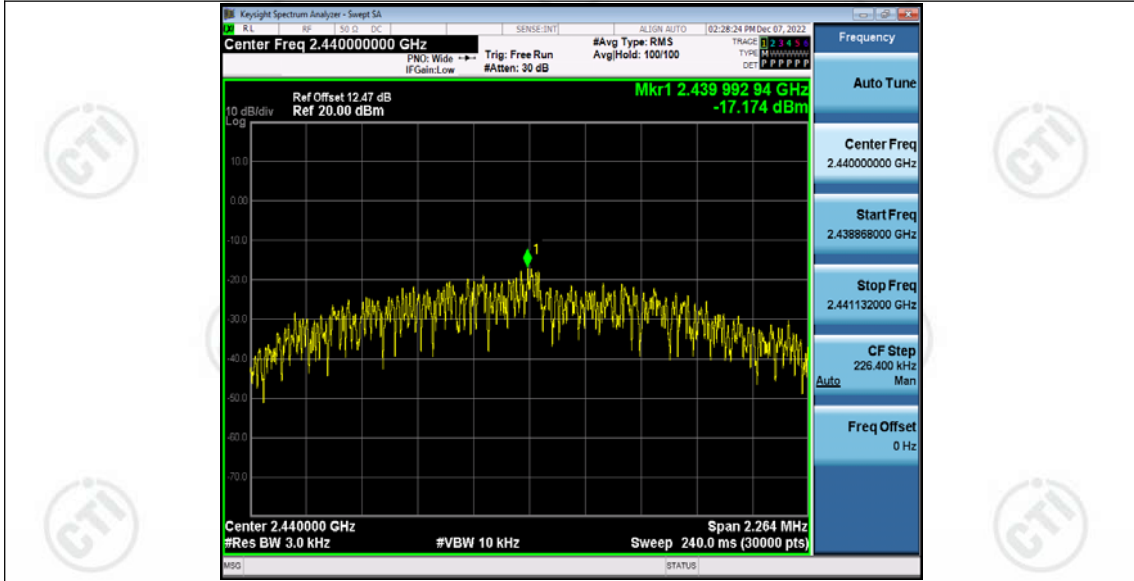
BLE_1M_Ant1_2480



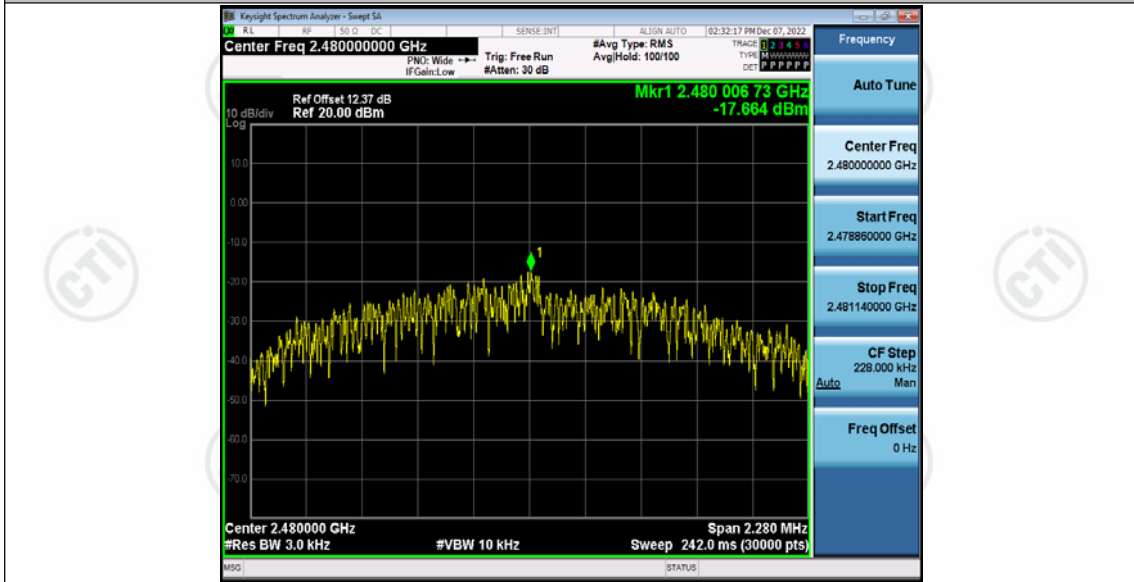
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480



Appendix F: Band edge measurements**Test Result**

Left:

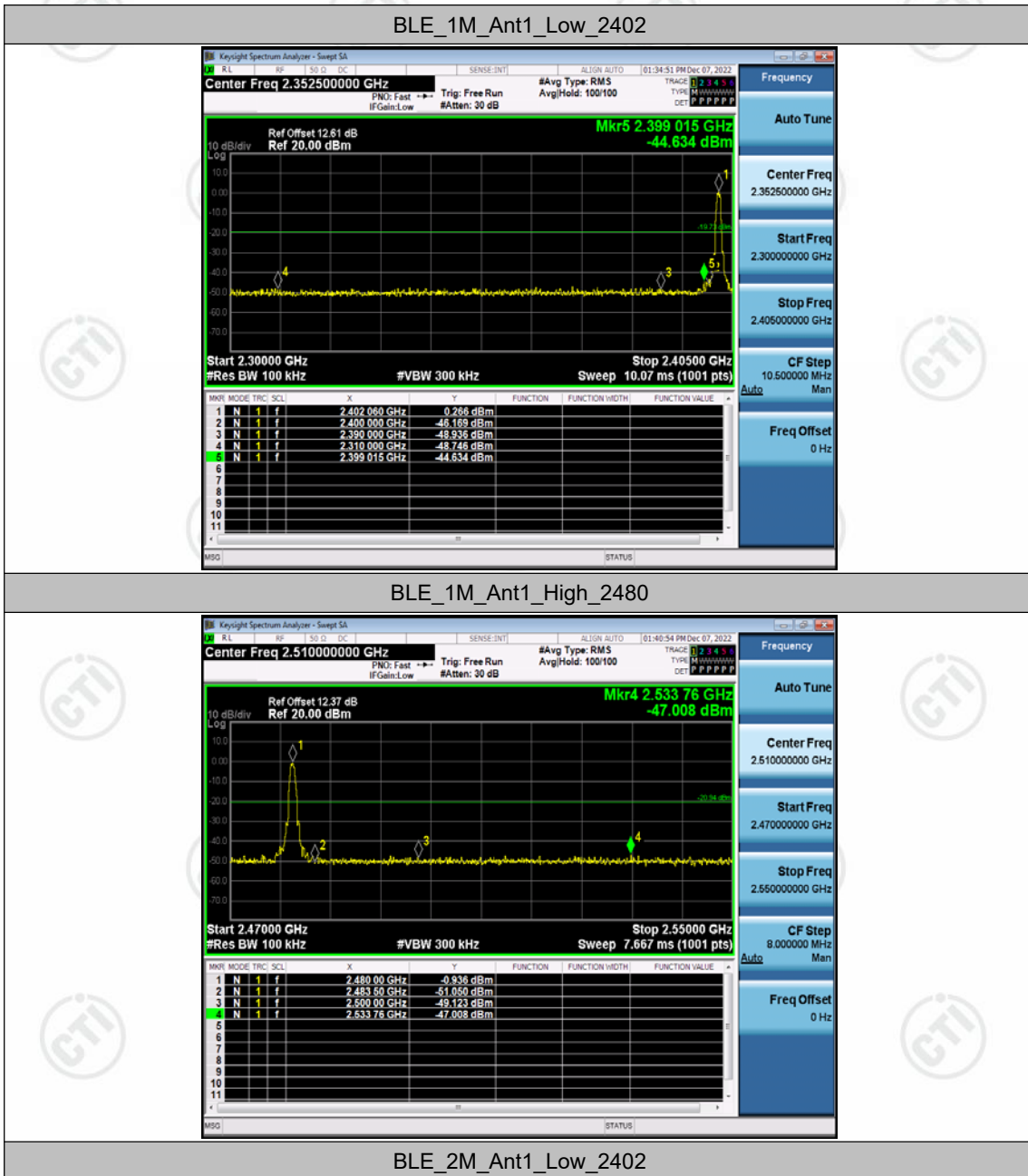
Test Mode	Antenna	Ch Name	Frequency[MHz]	Ref Level[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	0.27	-44.63	≤-19.73	PASS
		High	2480	-0.94	-47.01	≤-20.94	PASS
BLE_2M	Ant1	Low	2402	-0.63	-32.73	≤-20.63	PASS
		High	2480	-0.95	-46.46	≤-20.95	PASS

Right:

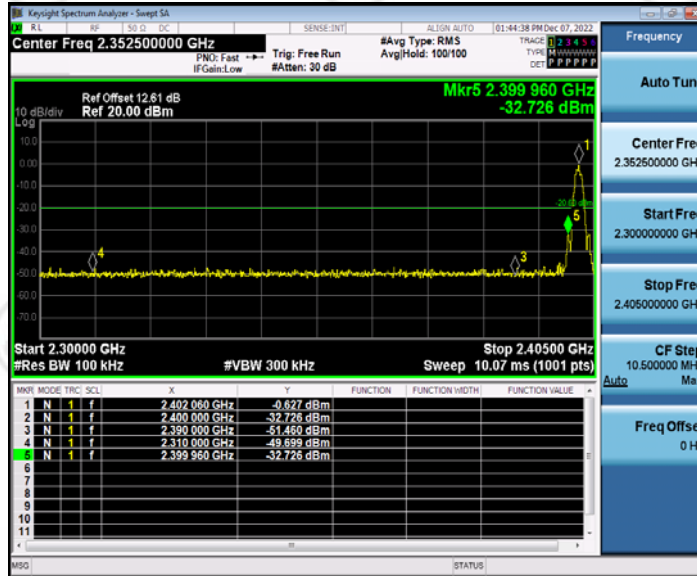
Test Mode	Antenna	Ch Name	Frequency[MHz]	Ref Level[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	1.05	-44.66	≤-18.95	PASS
		High	2480	-0.54	-47.21	≤-20.54	PASS
BLE_2M	Ant1	Low	2402	1.08	-31.49	≤-18.92	PASS
		High	2480	-0.13	-47.53	≤-20.13	PASS

Test Graphs

Left:



BLE_2M_Ant1_Low_2402



BLE_2M_Ant1_High_2480

