

Appendix: Bluetooth LE

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Appendix A: DTS Bandwidth

Test Result

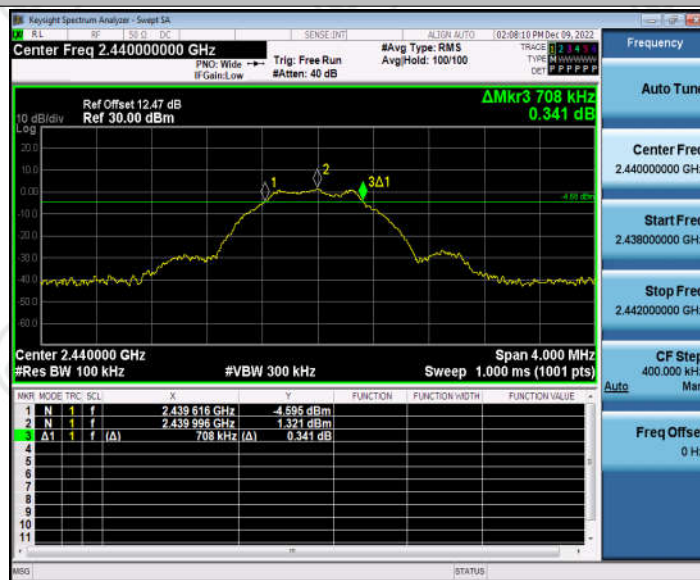
Test Mode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.684	2401.644	2402.328	0.5	PASS
		2440	0.708	2439.616	2440.324	0.5	PASS
		2480	0.700	2479.632	2480.332	0.5	PASS
BLE_2M	Ant1	2402	1.172	2401.400	2402.572	0.5	PASS
		2440	1.144	2439.412	2440.556	0.5	PASS
		2480	1.136	2479.396	2480.532	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

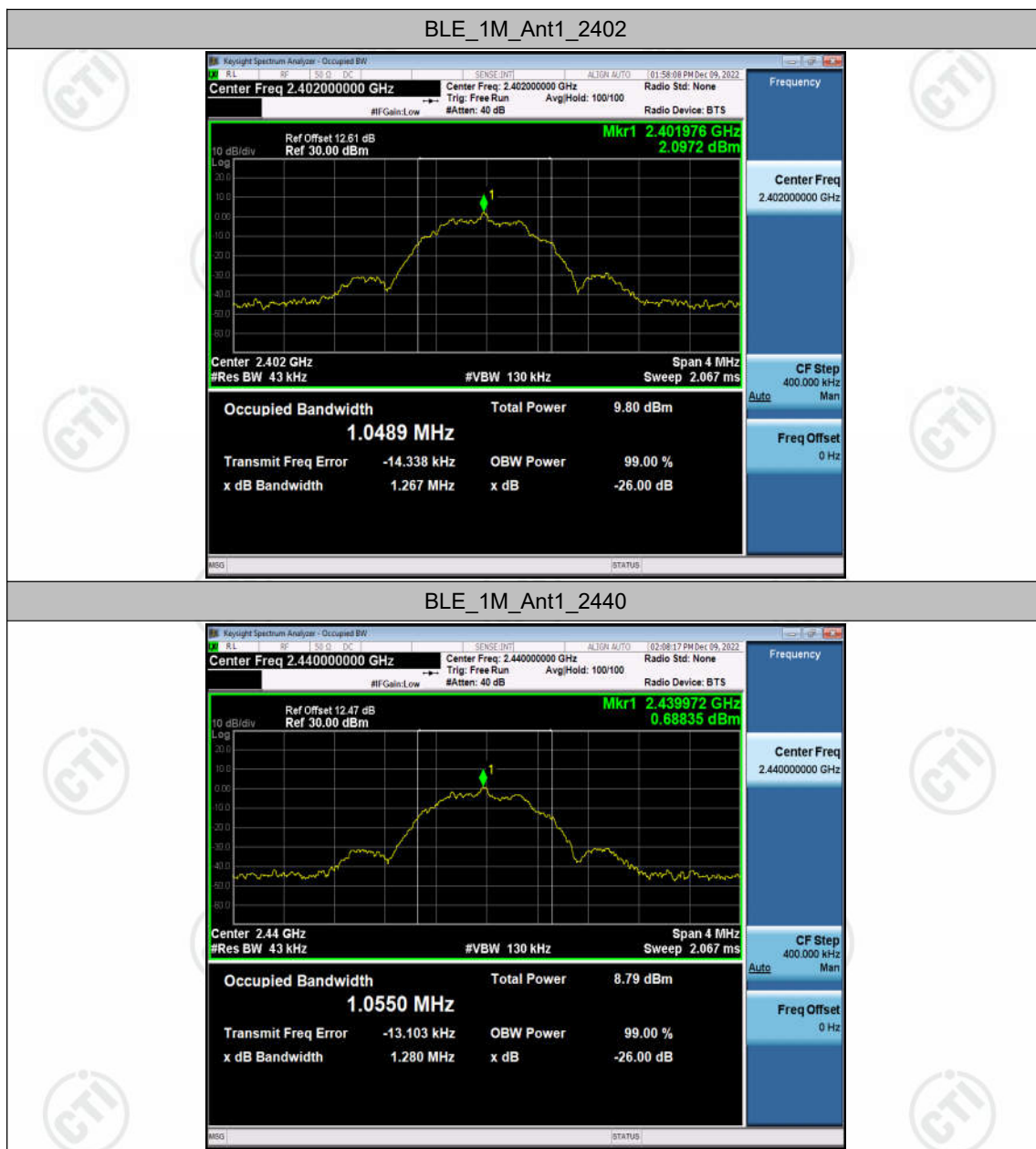


Appendix B: Occupied Channel Bandwidth

Test Result

Test Mode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit [MHz]	Verdict
BLE_1M	Ant1	2402	1.0489	2401.4612	2402.5101	---	---
		2440	1.0550	2439.4594	2440.5144	---	---
		2480	1.0505	2479.4577	2480.5082	---	---
BLE_2M	Ant1	2402	2.0547	2400.9715	2403.0262	---	---
		2440	2.0529	2438.9733	2441.0262	---	---
		2480	2.0554	2478.9705	2481.0259	---	---

Test Graphs



BLE_1M_Ant1_2480



BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480

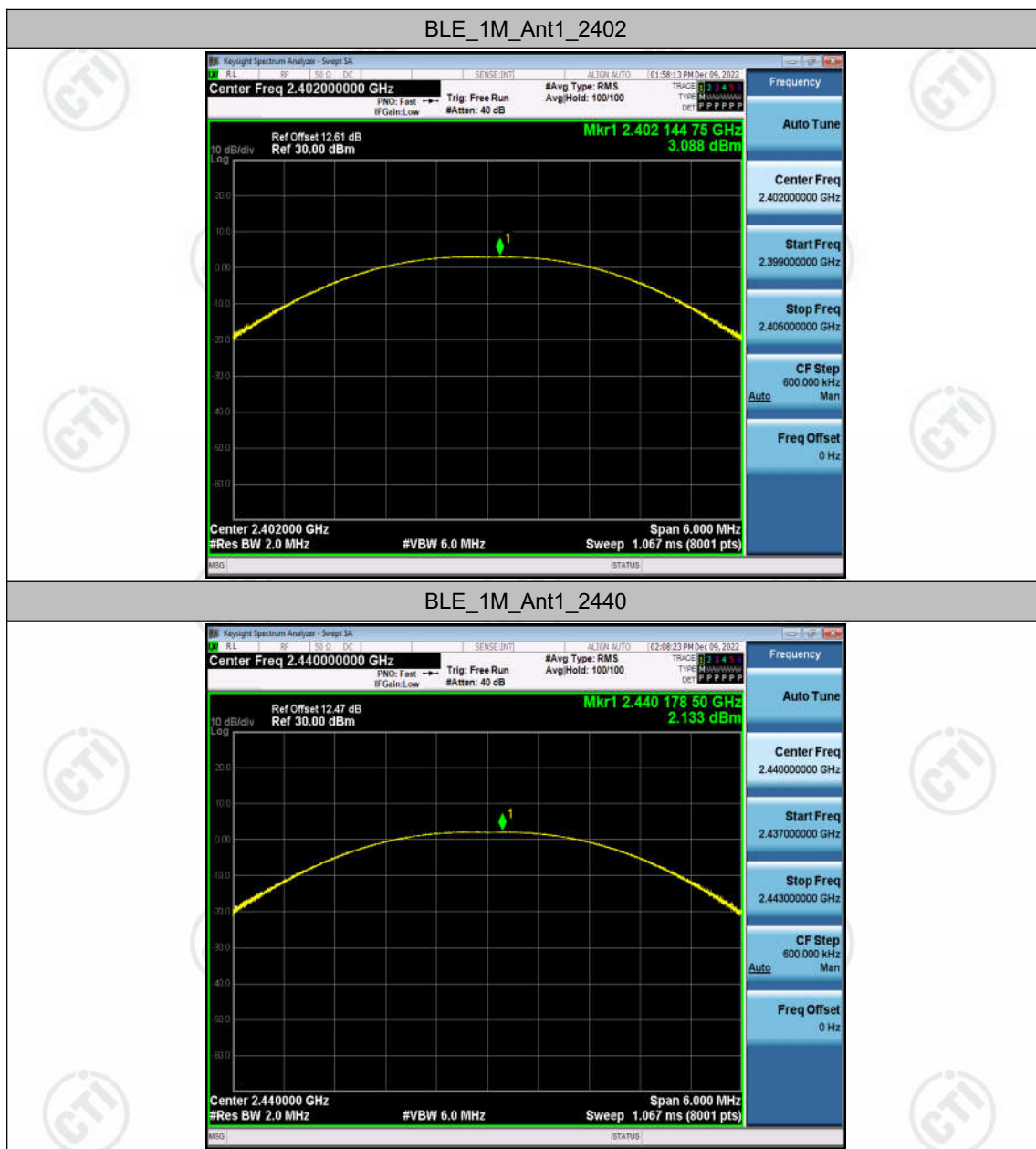


Appendix C: Maximum conducted output power

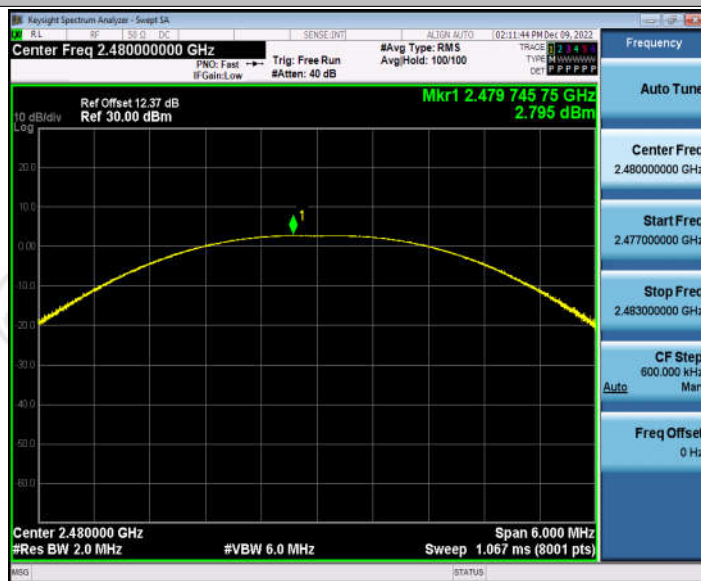
Test Result Peak

Test Mode	Antenna	Frequency[MHz]	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
BLE_1M	Ant1	2402	3.09	≤30	PASS
		2440	2.13	≤30	PASS
		2480	2.80	≤30	PASS
BLE_2M	Ant1	2402	3.05	≤30	PASS
		2440	2.13	≤30	PASS
		2480	2.83	≤30	PASS

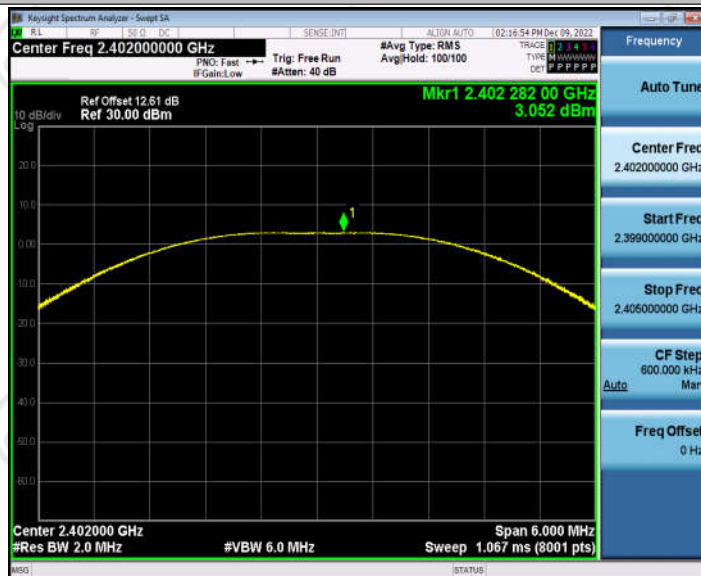
Test Graphs Peak

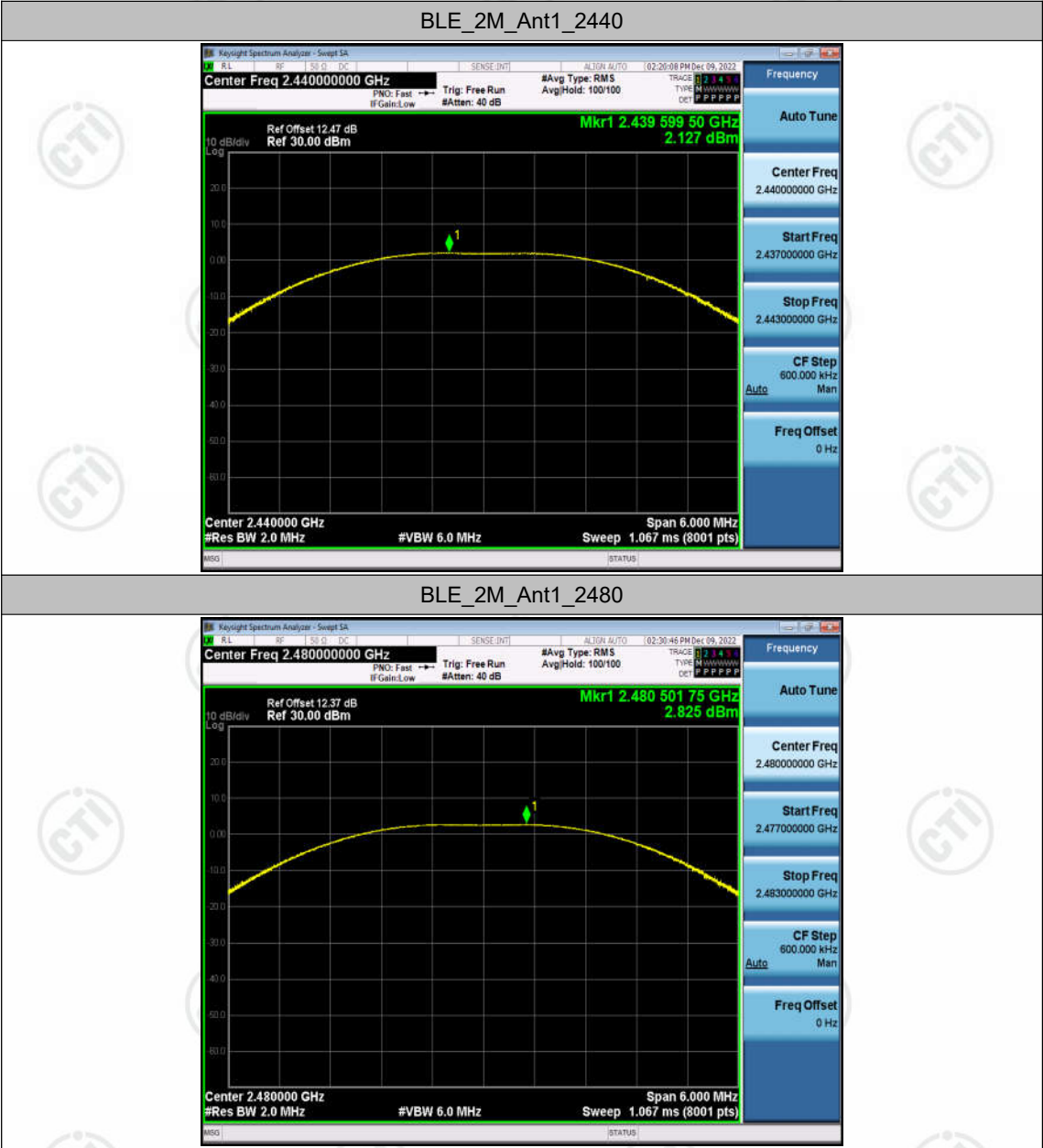


BLE_1M_Ant1_2480



BLE_2M_Ant1_2402



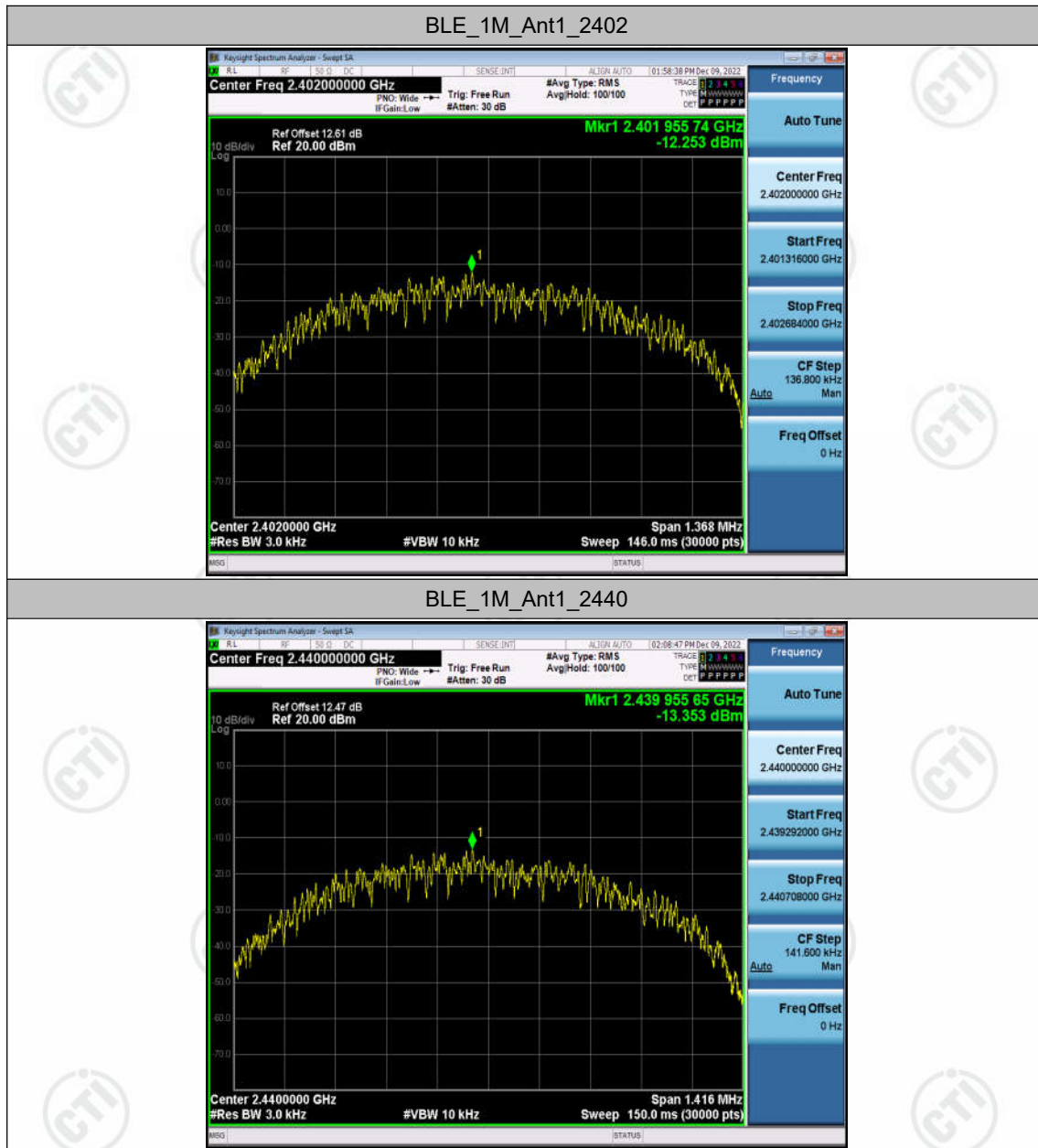


Appendix D: Maximum power spectral density

Test Result

Test Mode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-12.25	≤8.00	PASS
		2440	-13.35	≤8.00	PASS
		2480	-12.98	≤8.00	PASS
BLE_2M	Ant1	2402	-14.76	≤8.00	PASS
		2440	-15.86	≤8.00	PASS
		2480	-15.34	≤8.00	PASS

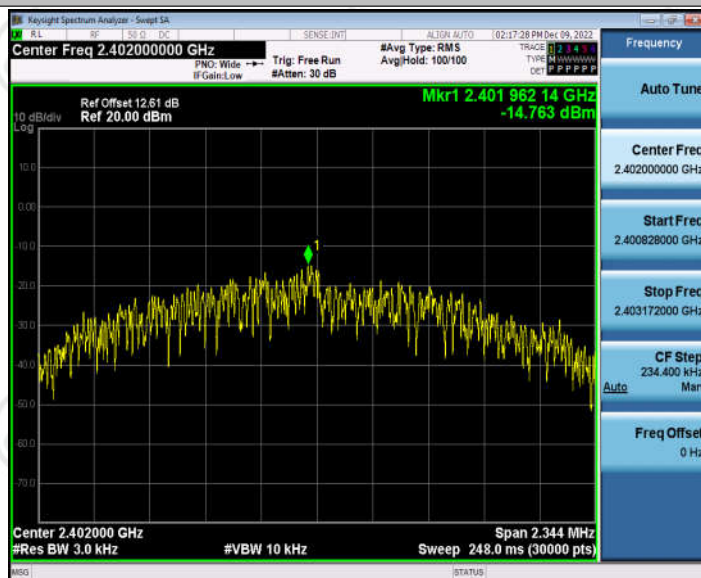
Test Graphs



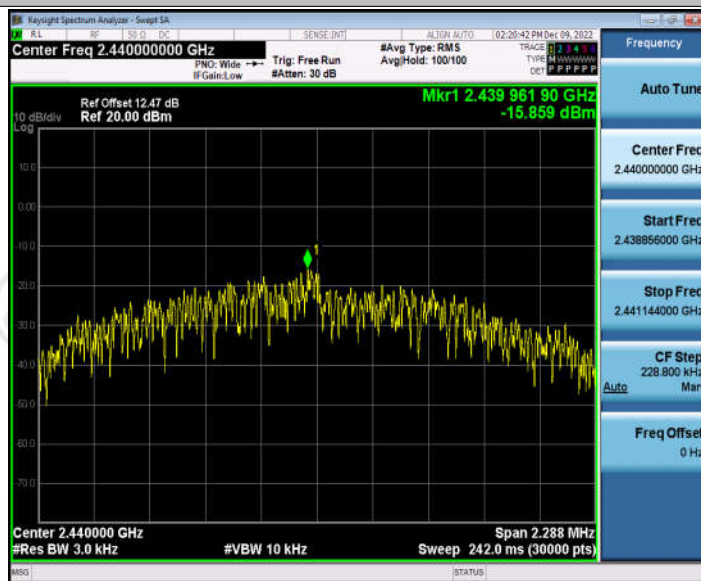
BLE_1M_Ant1_2480



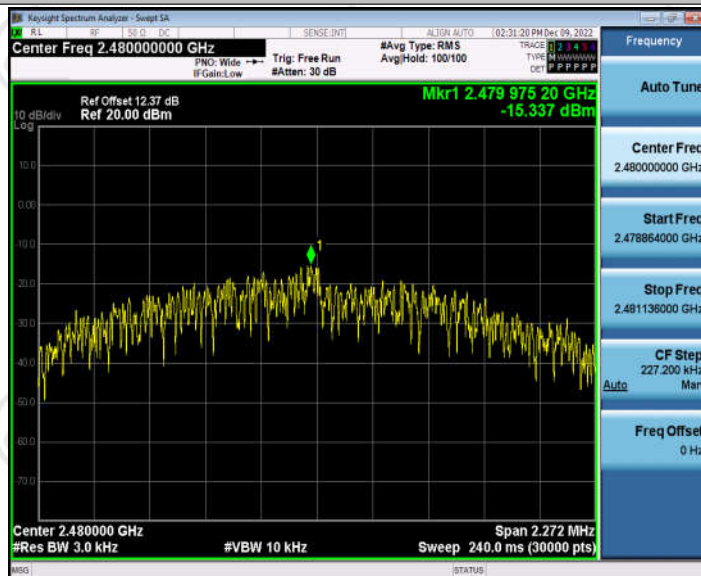
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480



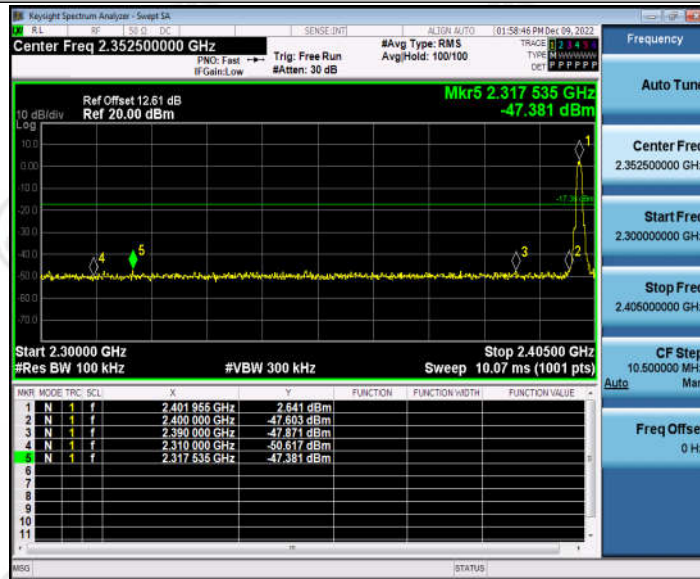
Appendix F: Band edge measurements

Test Result

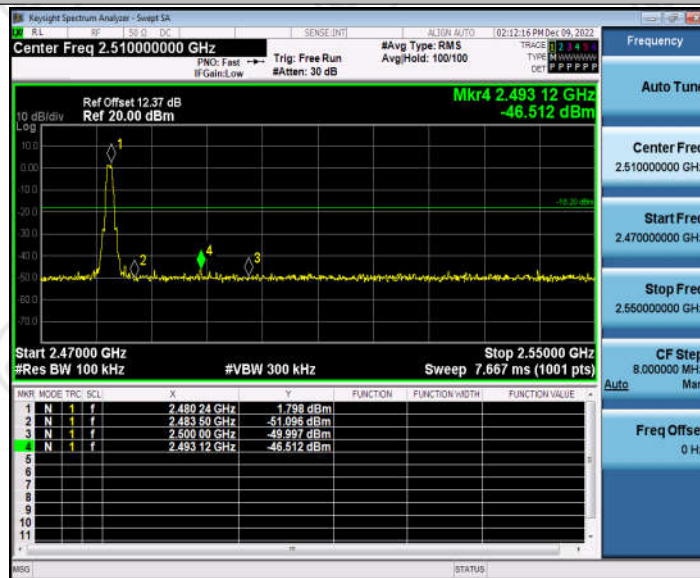
Test Mode	Antenna	Ch Name	Frequency [MHz]	Ref Leve l[dBm]	Result [dBm]	Limit [dBm]	Verdict
BLE_1M	Ant1	Low	2402	2.64	-47.38	≤-17.36	PASS
		High	2480	1.80	-46.51	≤-18.2	PASS
BLE_2M	Ant1	Low	2402	2.87	-29.85	≤-17.13	PASS
		High	2480	2.45	-47.36	≤-17.55	PASS

Test Graphs

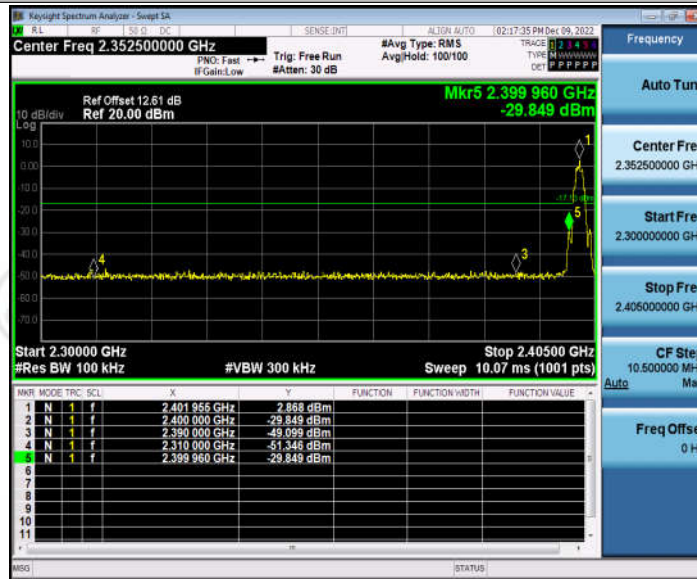
BLE_1M_Ant1_Low_2402



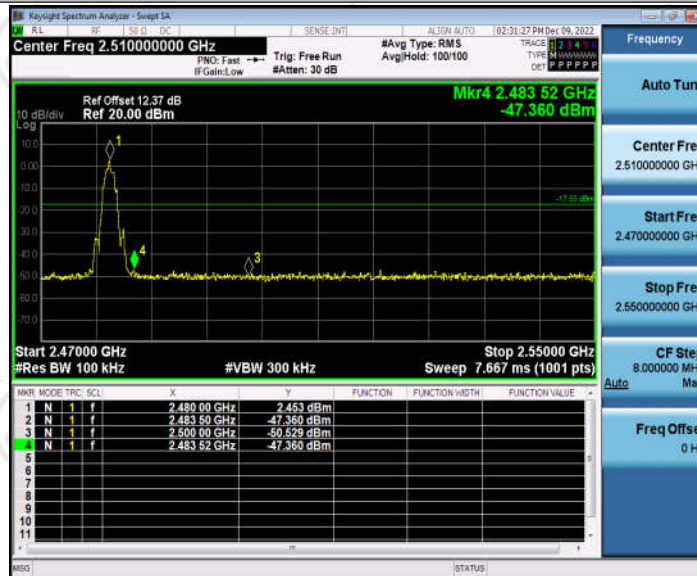
BLE_1M_Ant1_High_2480



BLE_2M_Ant1_Low_2402



BLE_2M_Ant1_High_2480

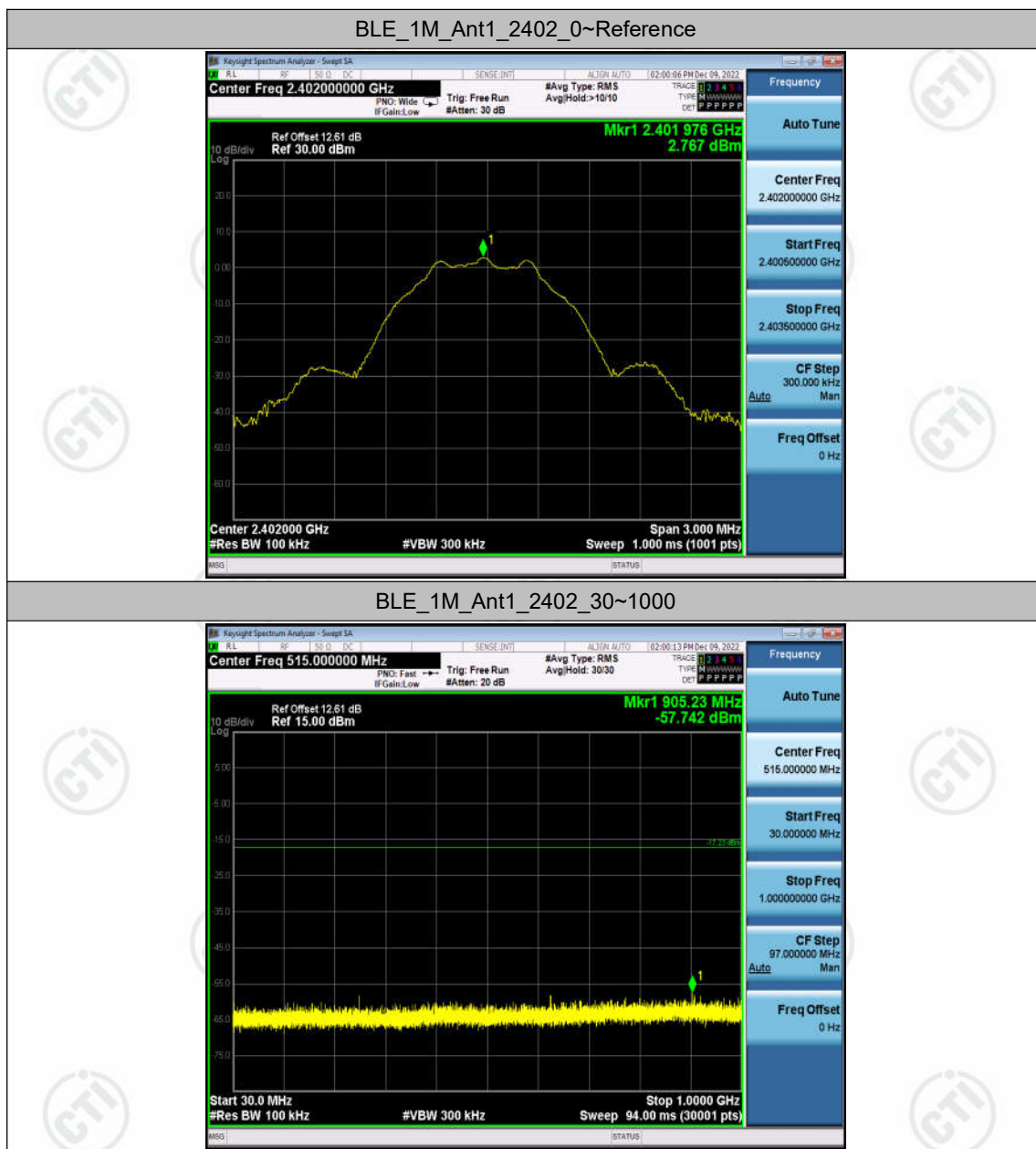


Appendix G: Conducted Spurious Emission

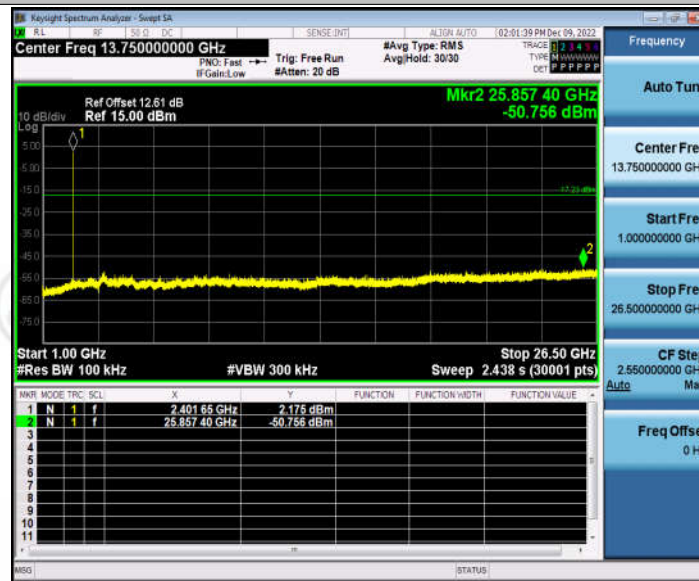
Test Result

Test Mode	Antenna	Frequency[MHz]	Freq Range [MHz]	Ref Level [dBm]	Result [dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	2.77	2.77	---	PASS
			30~1000	2.77	-57.74	≤-17.23	PASS
			1000~26500	2.77	-50.76	≤-17.23	PASS
		2440	Reference	1.83	1.83	---	PASS
			30~1000	1.83	-58.34	≤-18.17	PASS
			1000~26500	1.83	-50.19	≤-18.17	PASS
		2480	Reference	2.46	2.46	---	PASS
			30~1000	2.46	-58.78	≤-17.54	PASS
			1000~26500	2.46	-50.39	≤-17.54	PASS
BLE_2M	Ant1	2402	Reference	2.72	2.72	---	PASS
			30~1000	2.72	-58.17	≤-17.28	PASS
			1000~26500	2.72	-50.08	≤-17.28	PASS
		2440	Reference	1.81	1.81	---	PASS
			30~1000	1.81	-57.86	≤-18.19	PASS
			1000~26500	1.81	-50.46	≤-18.19	PASS
		2480	Reference	2.47	2.47	---	PASS
			30~1000	2.47	-58.07	≤-17.53	PASS
			1000~26500	2.47	-49.49	≤-17.53	PASS

Test Graphs



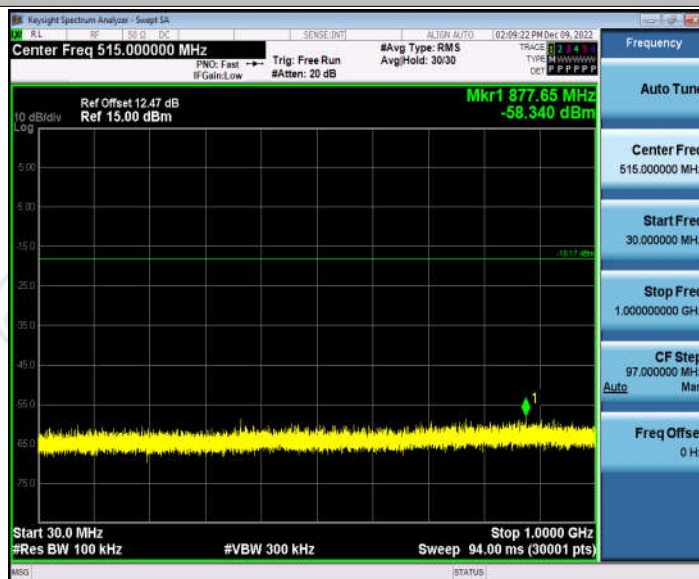
BLE_1M_Ant1_2402_1000~26500



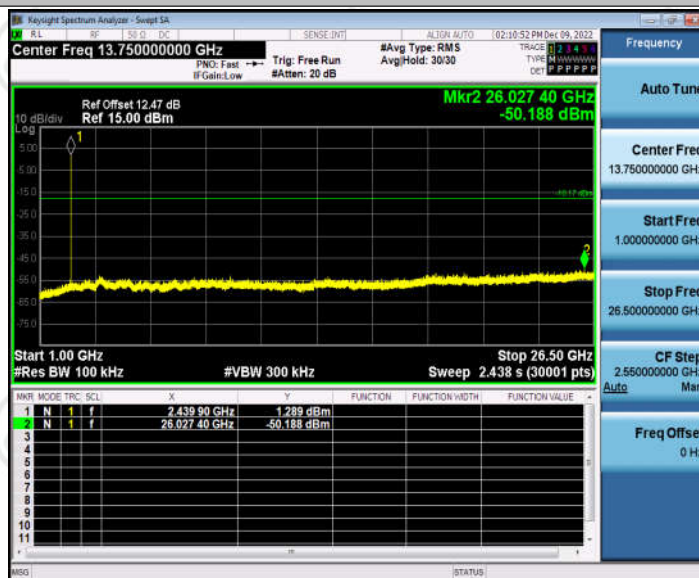
BLE_1M_Ant1_2440_0~Reference



BLE_1M_Ant1_2440_30~1000



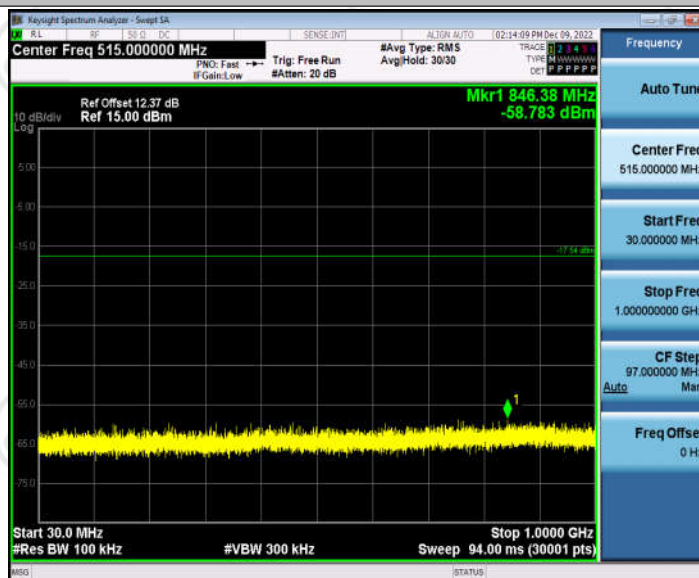
BLE_1M_Ant1_2440_1000~26500



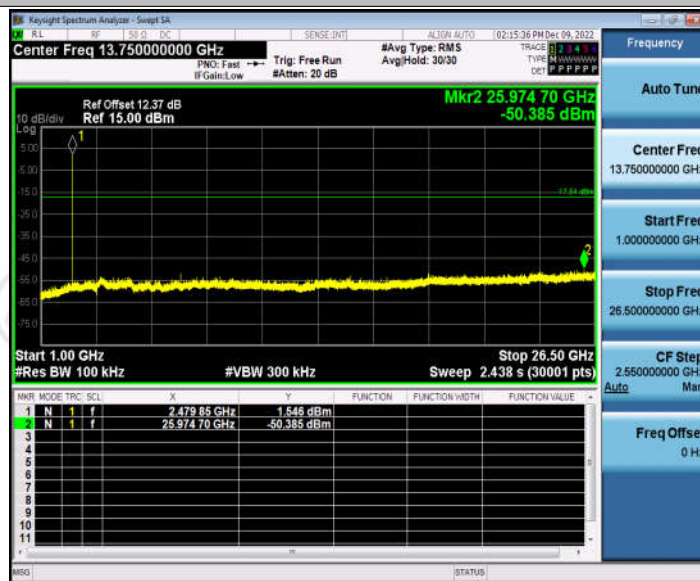
BLE_1M_Ant1_2480_0~Reference



BLE_1M_Ant1_2480_30~1000



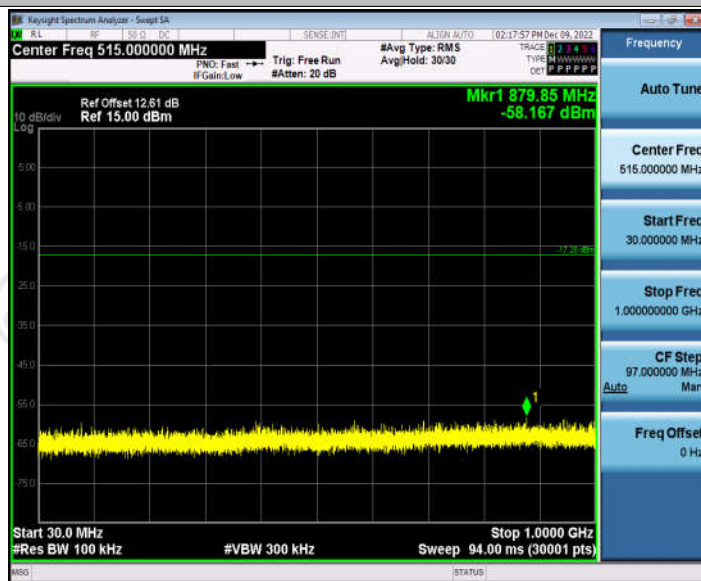
BLE_1M_Ant1_2480_1000~26500



BLE_2M_Ant1_2402_0~Reference



BLE_2M_Ant1_2402_30~1000



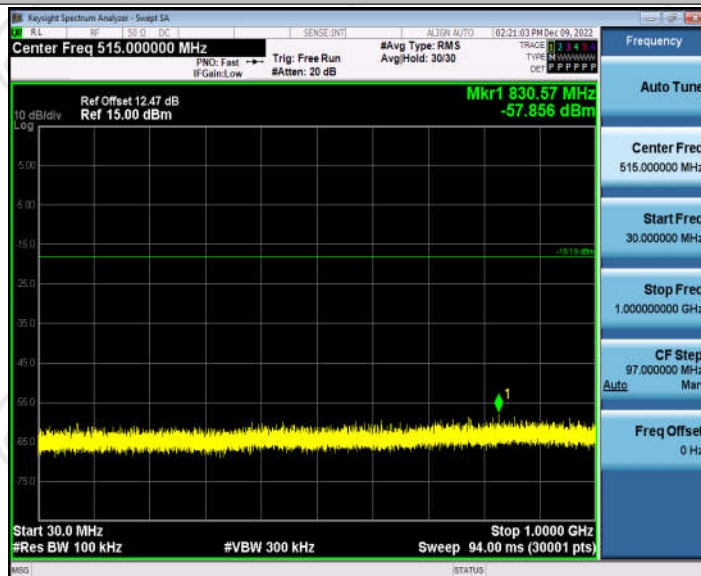
BLE_2M_Ant1_2402_1000~26500



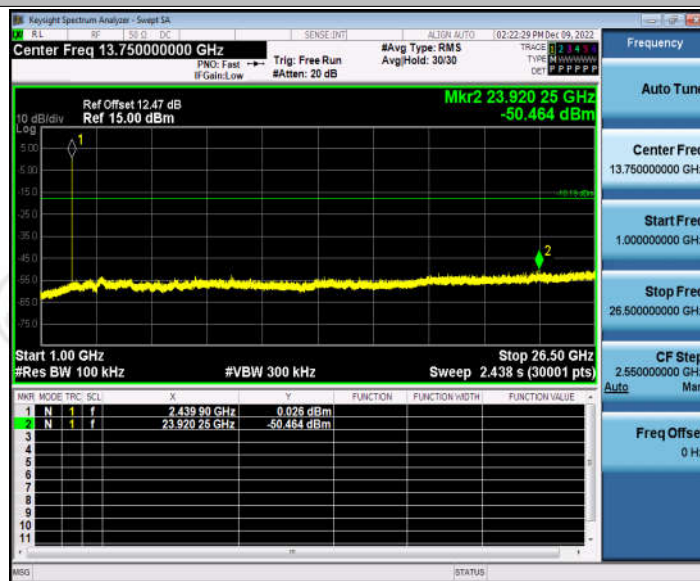
BLE_2M_Ant1_2440_0~Reference



BLE_2M_Ant1_2440_30~1000



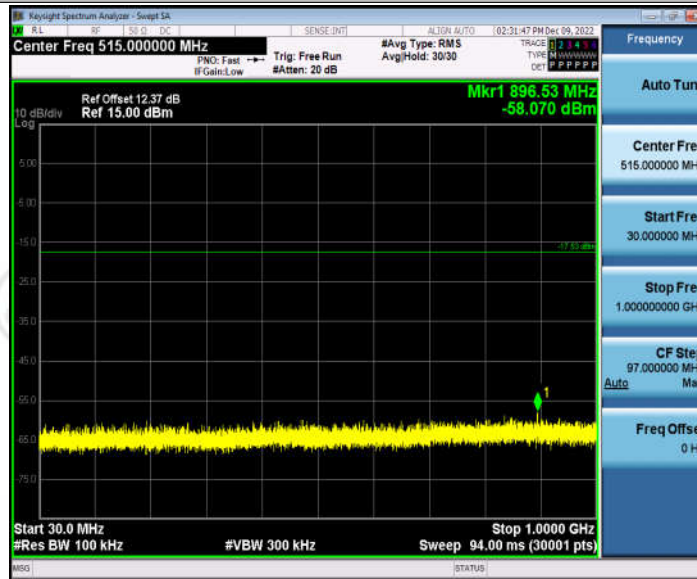
BLE_2M_Ant1_2440_1000~26500



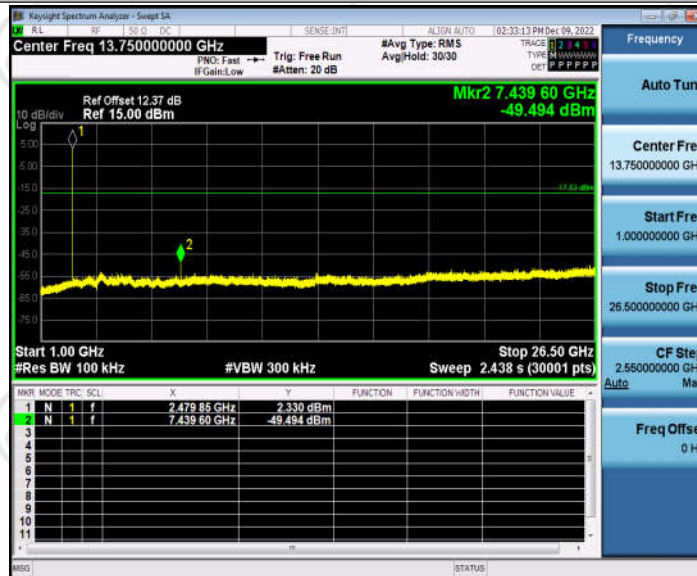
BLE_2M_Ant1_2480_0~Reference



BLE_2M_Ant1_2480_30~1000



BLE_2M_Ant1_2480_1000~26500



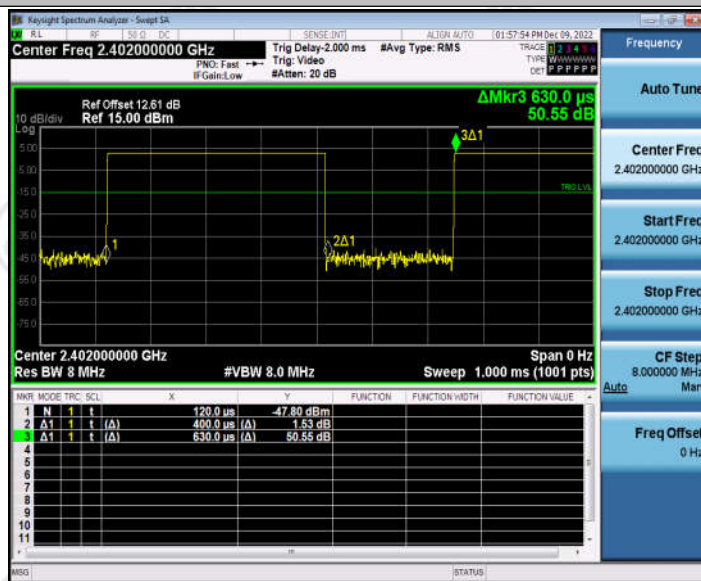
Appendix H: Duty Cycle

Test Result

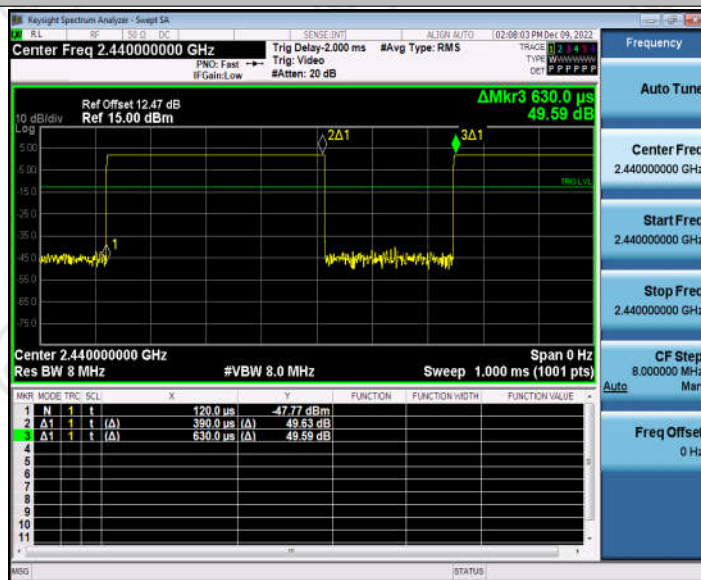
Test Mode	Antenna	Frequency[MHz]	ON Time [ms]	Period [ms]	Duty Cycle [%]	Duty Cycle Factor[dB]
BLE_1M	Ant1	2402	0.40	0.63	63.49	1.97
		2440	0.39	0.63	61.90	2.08
		2480	0.40	0.63	63.49	1.97
BLE_2M	Ant1	2402	0.21	0.63	33.33	4.77
		2440	0.21	0.63	33.33	4.77
		2480	0.21	0.63	33.33	4.77

Test Graphs

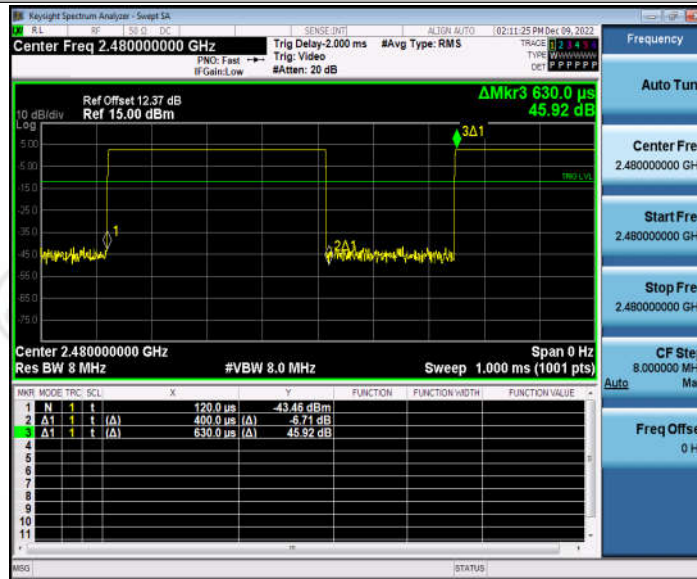
BLE_1M_Ant1_2402



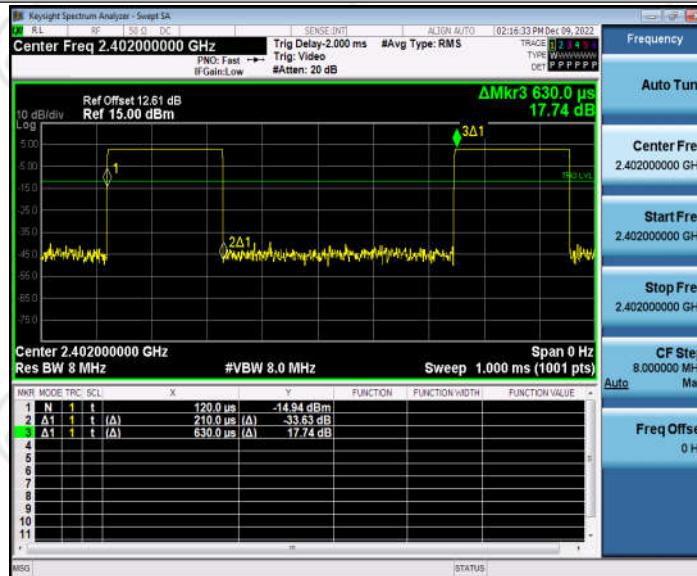
BLE_1M_Ant1_2440



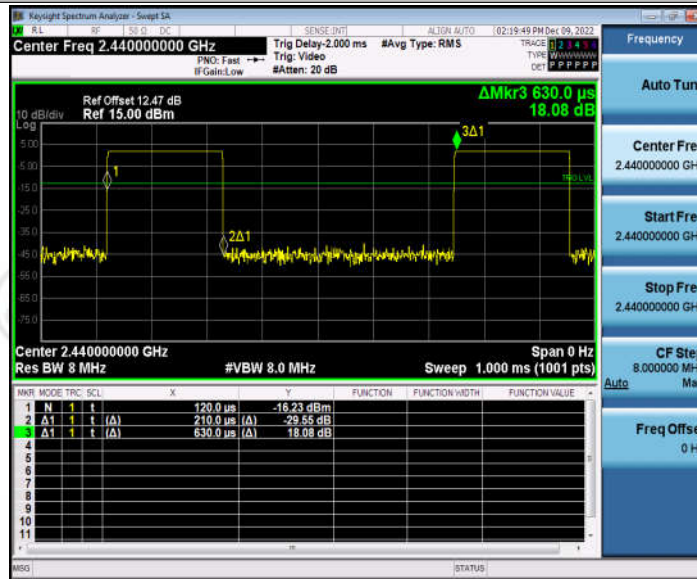
BLE_1M_Ant1_2480



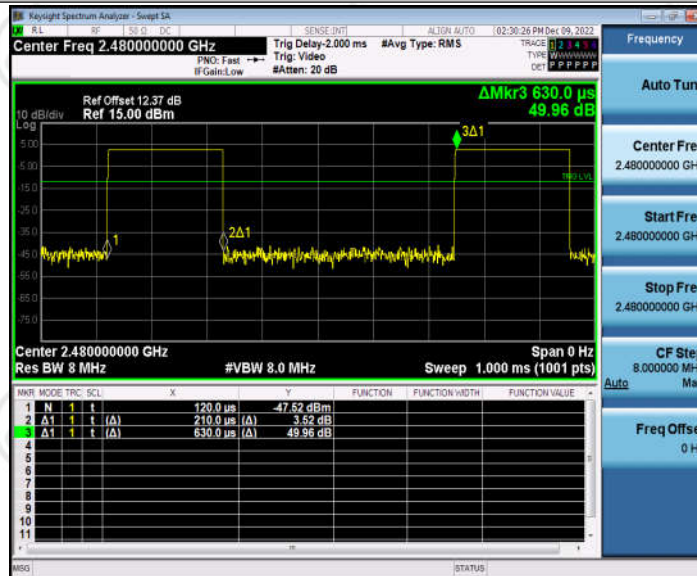
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480



*** End of Report ***