



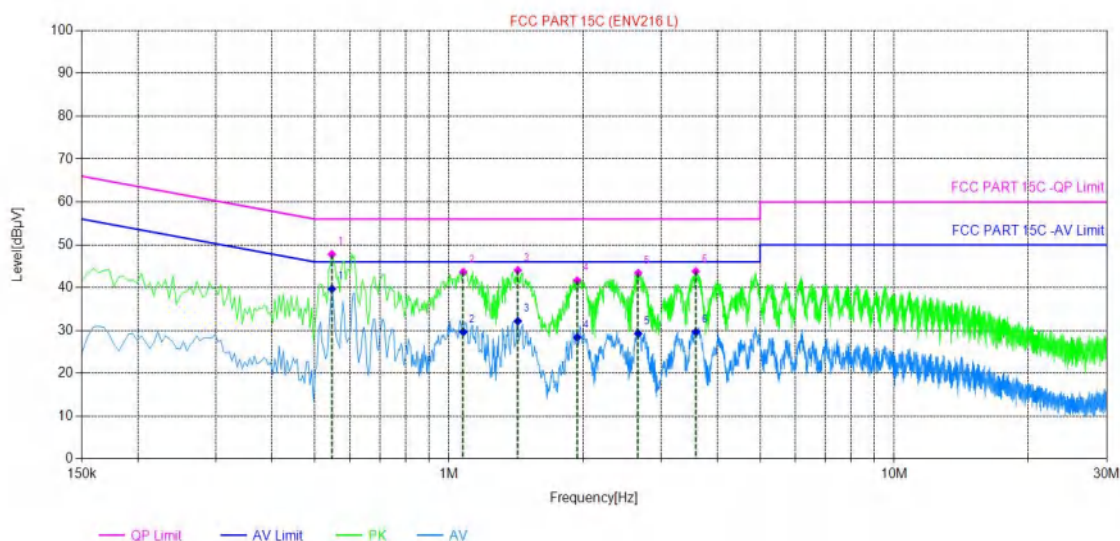
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates at lowest, middle and highest channel. Charge + Transmitting mode.
Final Test Mode:	Through Pre-scan, find the the worst case of GFSK
Instruments Used:	Refer to section 2.9 for details
Test Results:	Pass

Measurement Data

An initial pre-scan was performed on the live and neutral lines with peak detector.

Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

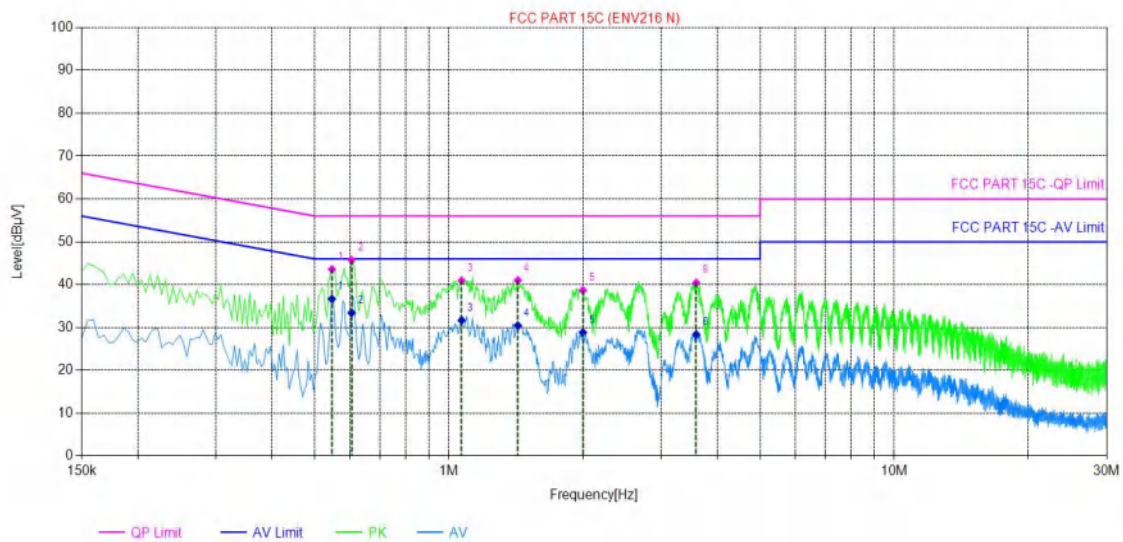
Live Line:



NO.	Freq. [MHz]	Factor [dB]	QP Value [dBμV]	QP Limit [dBμV]	QP Margin [dB]	AV Value [dBμV]	AV Limit [dBμV]	AV Margin [dB]	Verdict
1	0.546	9.85	47.78	56.00	8.22	39.70	46.00	6.30	PASS
2	1.077	9.72	43.64	56.00	12.36	29.67	46.00	16.33	PASS
3	1.428	9.73	44.05	56.00	11.95	32.18	46.00	13.82	PASS
4	1.941	9.73	41.65	56.00	14.35	28.36	46.00	17.64	PASS
5	2.661	9.74	43.40	56.00	12.60	29.25	46.00	16.75	PASS
6	3.5835	9.75	43.80	56.00	12.20	29.67	46.00	16.33	PASS



Neutral Line:



NO.	Freq. [MHz]	Factor [dB]	QP Value [dBμV]	QP Limit [dBμV]	QP Margin [dB]	AV Value [dBμV]	AV Limit [dBμV]	AV Margin [dB]	Verdict
1	0.546	9.74	43.58	56.00	12.42	36.66	46.00	9.34	PASS
2	0.6045	9.79	45.77	56.00	10.23	33.43	46.00	12.57	PASS
3	1.068	9.69	40.95	56.00	15.05	31.68	46.00	14.32	PASS
4	1.428	9.72	40.99	56.00	15.01	30.47	46.00	15.53	PASS
5	1.9995	9.78	38.65	56.00	17.35	28.88	46.00	17.12	PASS
6	3.5925	9.92	40.43	56.00	15.57	28.39	46.00	17.61	PASS

Remark:

1. The following Quasi-Peak and Average measurements were performed on the EUT:
3. The Measurement (Result Level) is calculated by Reading Level adding the Correct Factor(maybe including LISN Factor and the Cable Factor etc.), The basic equation is as follows:
Result Level= Reading Level + Correct Factor(including LISN Factor, Cable Factor etc.)



4 Appendix

Appendix A: Duty Cycle

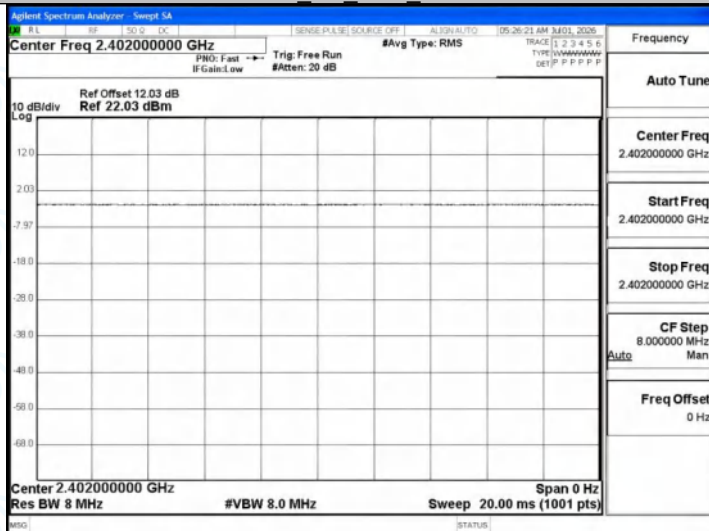
Test Result

TestMode	Antenna	Freq(MHz)	ON Time [ms]	Period [ms]	X	DC [%]	xFactor	Limit	Verdict
BLE_1M	Ant1	2402	0.00	0.00	---	100	0	---	---
		2440	0.00	0.00	---	100	0	---	---
		2480	0.00	0.00	---	100	0	---	---
BLE_2M	Ant1	2402	0.00	0.00	---	100	0	---	---
		2440	0.00	0.00	---	100	0	---	---
		2480	0.00	0.00	---	100	0	---	---

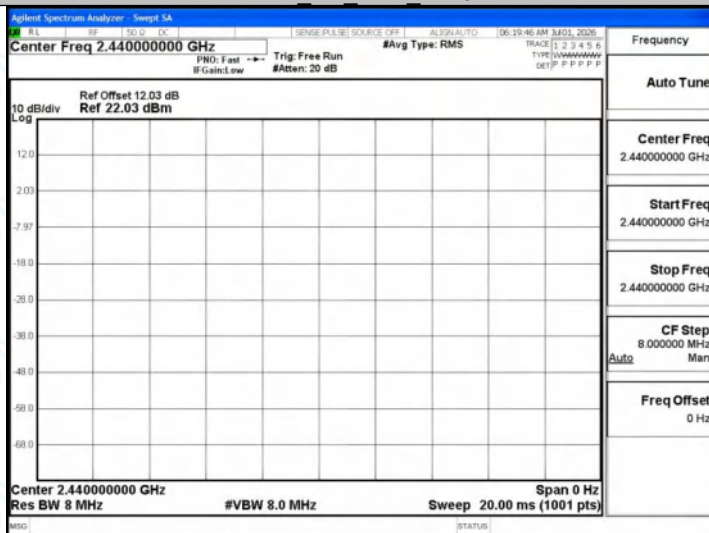


Test Graphs

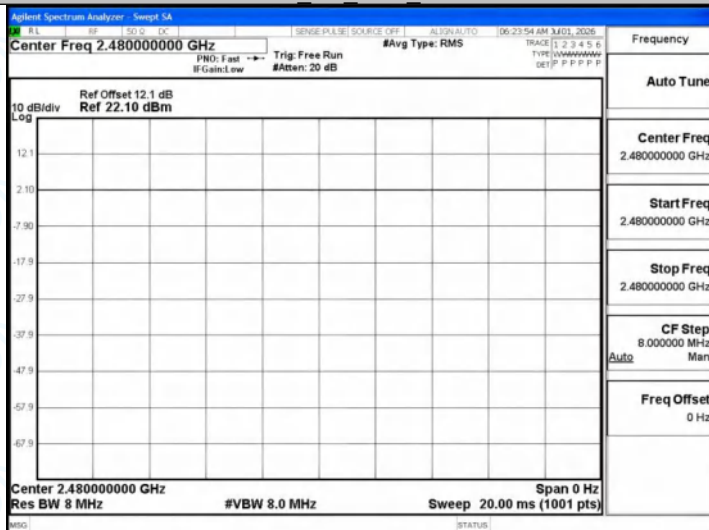
BLE 1M Ant1 2402



BLE 1M Ant1 2440



BLE 1M Ant1 2480





Appendix B: DTS Bandwidth

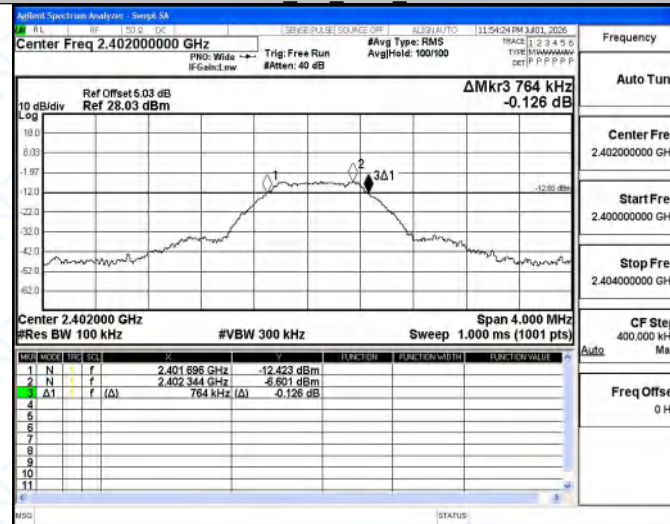
Test Result

TestMode	Antenna	Freq(MHz)	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.764	2401.696	2402.460	0.5	PASS
		2440	0.744	2439.664	2440.408	0.5	PASS
		2480	0.764	2479.576	2480.340	0.5	PASS
BLE_2M	Ant1	2402	1.328	2401.416	2402.744	0.5	PASS
		2440	1.488	2439.292	2440.780	0.5	PASS
		2480	1.492	2479.220	2480.712	0.5	PASS

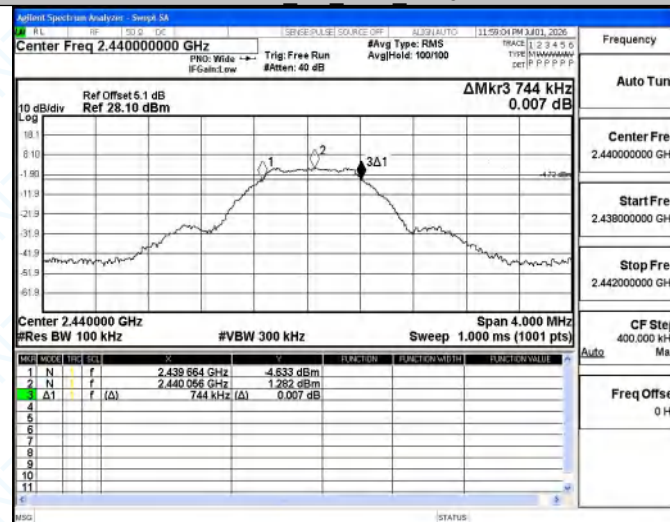


Test Graphs

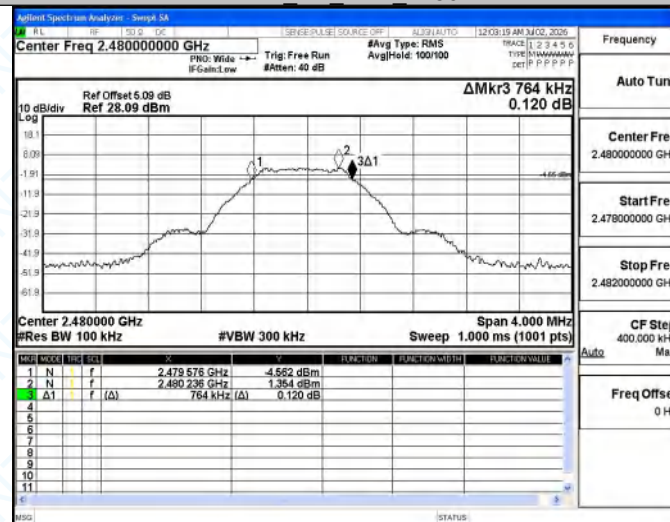
BLE 1M Ant1 2402



BLE 1M Ant1 2440

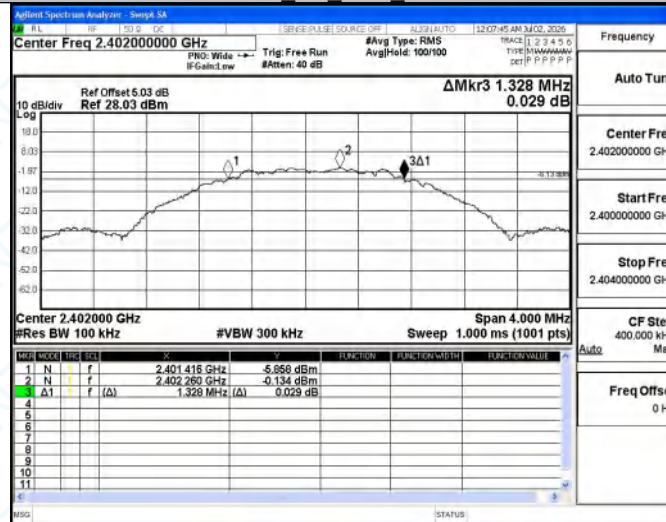


BLE 1M Ant1 2480

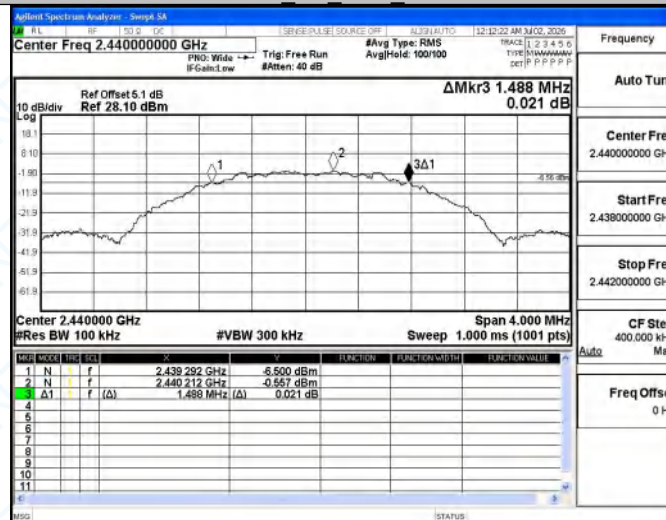




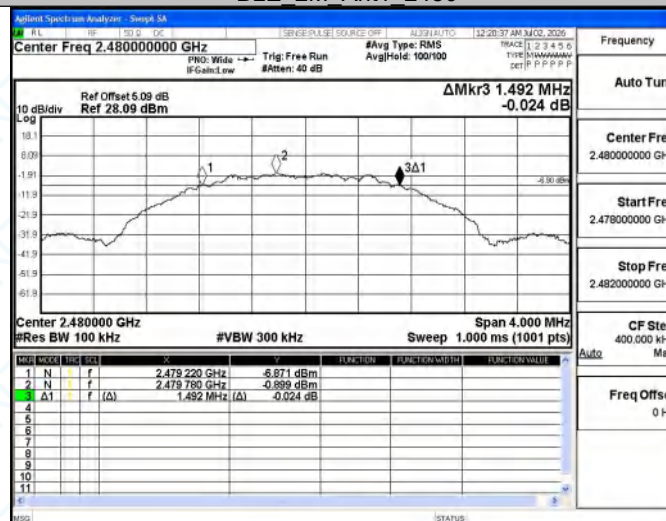
BLE 2M Ant1 2402



BLE 2M Ant1 2440



BLE 2M Ant1 2480





Appendix C: Maximum conducted output power

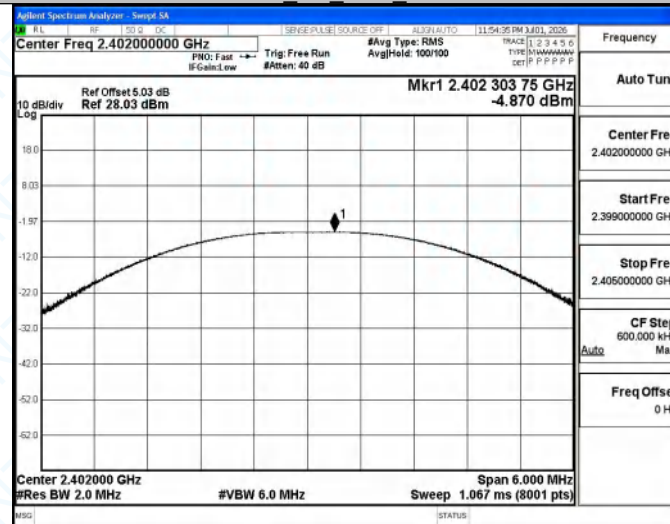
Test Result

TestMode	Antenna	Freq(MHz)	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
BLE_1M	Ant1	2402	3.47	≤30	PASS
		2440	2.82	≤30	PASS
		2480	2.96	≤30	PASS
BLE_2M	Ant1	2402	3.51	≤30	PASS
		2440	3.12	≤30	PASS
		2480	2.92	≤30	PASS

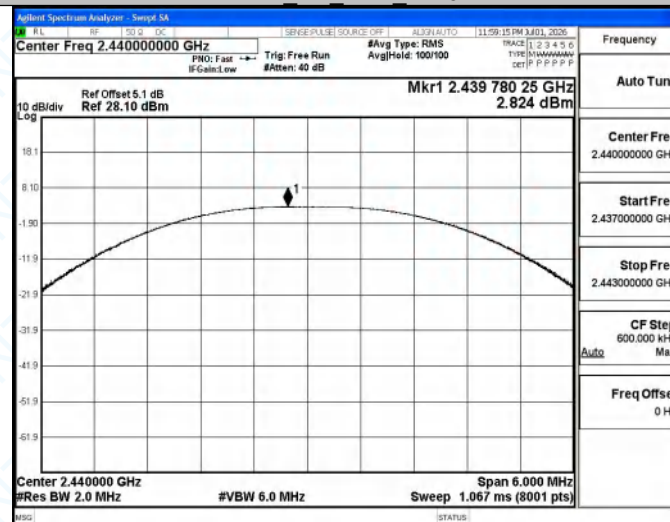


Test Graphs

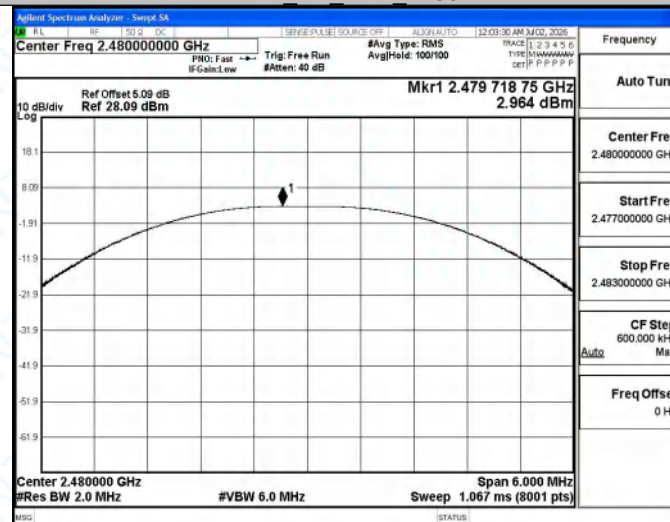
BLE 1M Ant1 2402



BLE 1M Ant1 2440

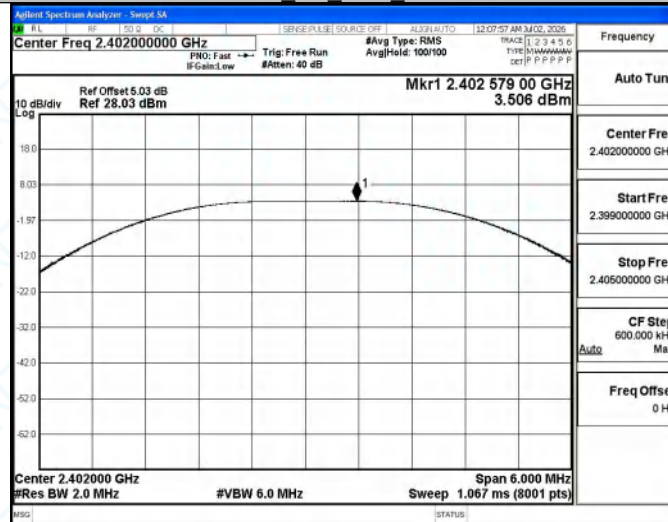


BLE 1M Ant1 2480

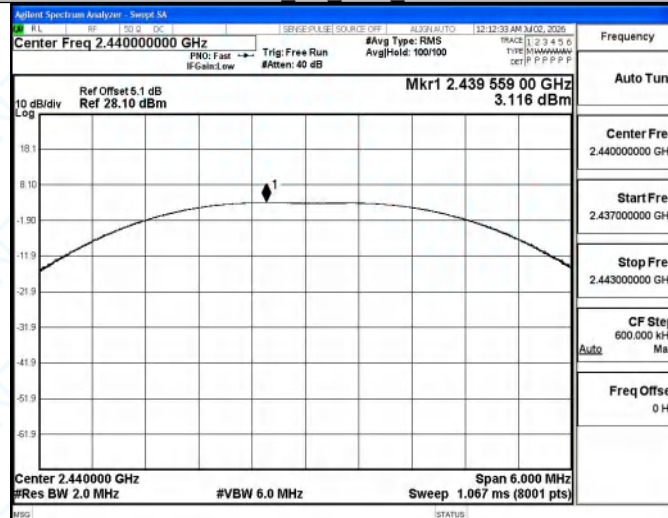




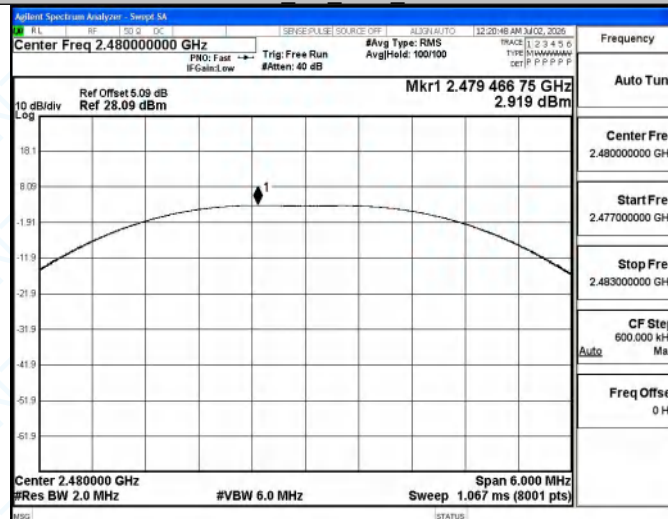
BLE 2M Ant1 2402



BLE 2M Ant1 2440



BLE 2M Ant1 2480





Appendix D: Maximum power spectral density

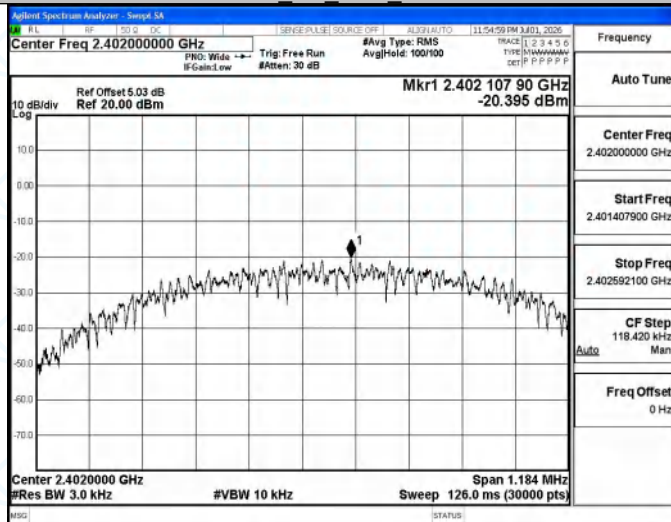
Test Result

TestMode	Antenna	Freq(MHz)	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-20.40	≤8.00	PASS
		2440	-12.22	≤8.00	PASS
		2480	-12.55	≤8.00	PASS
BLE_2M	Ant1	2402	-13.26	≤8.00	PASS
		2440	-13.44	≤8.00	PASS
		2480	-13.88	≤8.00	PASS

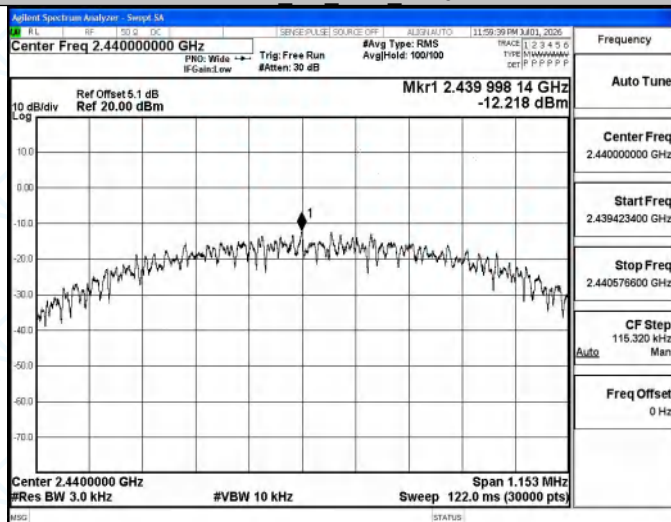


Test Graphs

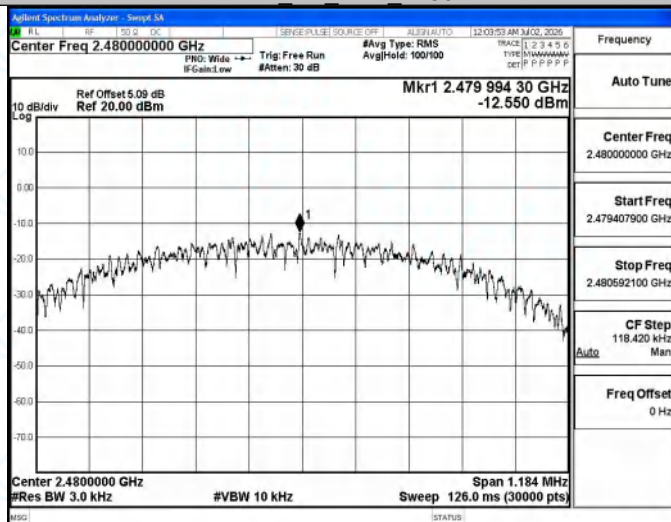
BLE 1M Ant1 2402



BLE 1M Ant1 2440

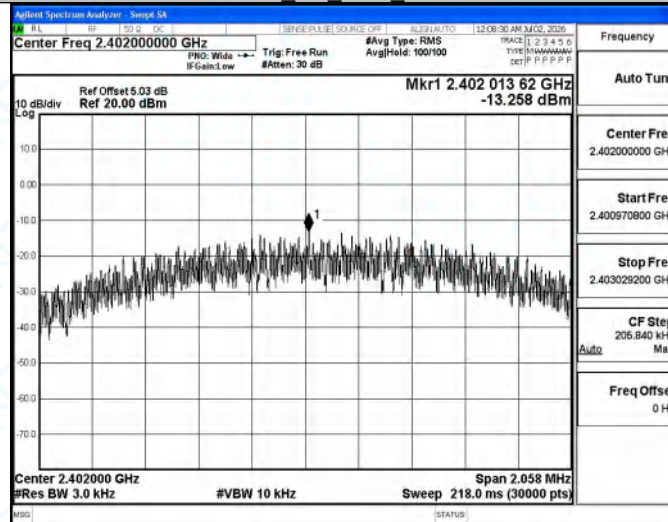


BLE 1M Ant1 2480

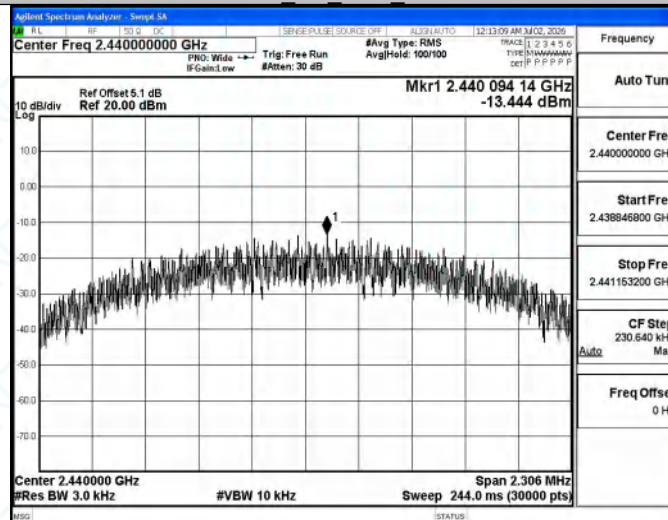




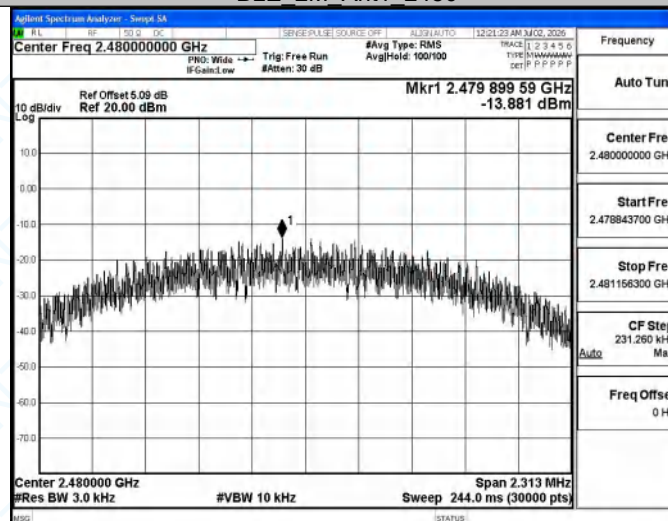
BLE 2M Ant1 2402



BLE 2M Ant1 2440



BLE 2M Ant1 2480





Appendix E: Band edge measurements

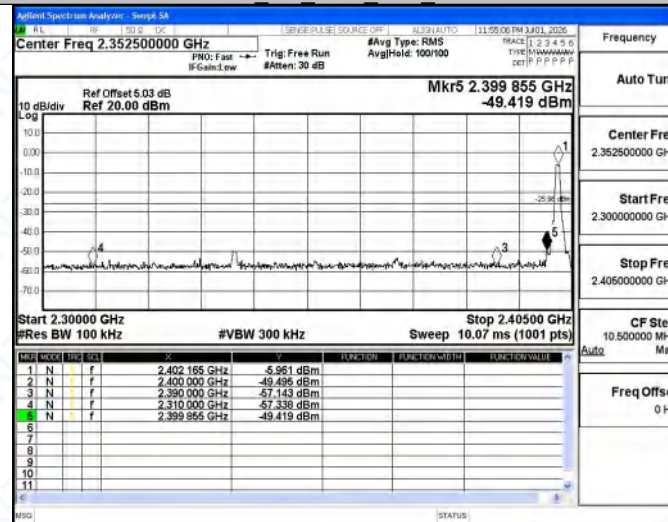
Test Result

TestMode	Antenna	ChName	Freq(MHz)	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	-5.96	-49.42	≤-25.96	PASS
		High	2480	1.43	-44.5	≤-18.57	PASS
BLE_2M	Ant1	Low	2402	0.02	-34.79	≤-19.98	PASS
		High	2480	-0.60	-46.22	≤-20.6	PASS

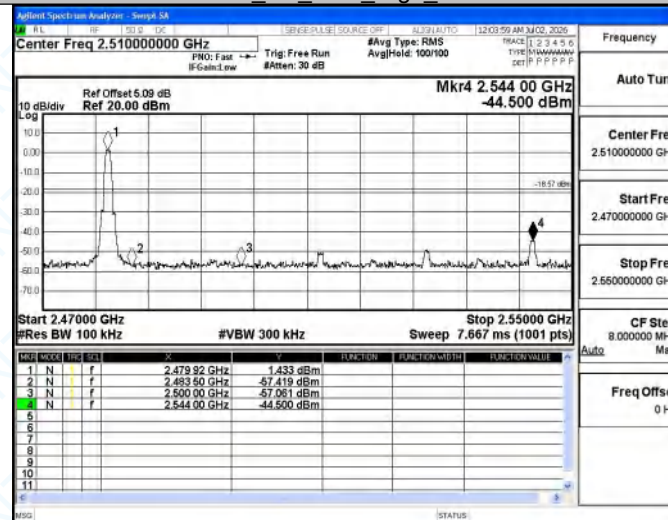


Test Graphs

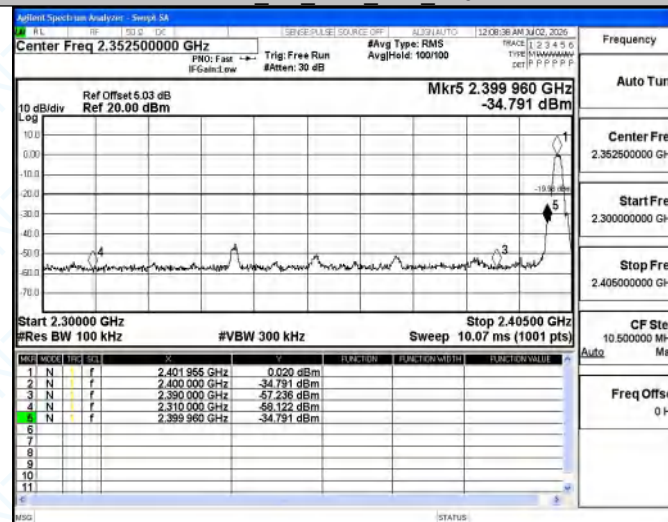
BLE 1M Ant1 Low 2402



BLE 1M Ant1 High 2480

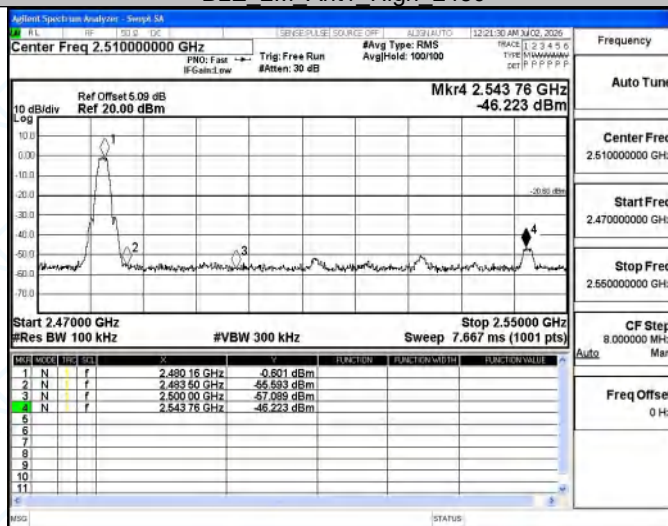


BLE 2M Ant1 Low 2402





BLE 2M Ant1_High_2480





Appendix F: Conducted Spurious Emission

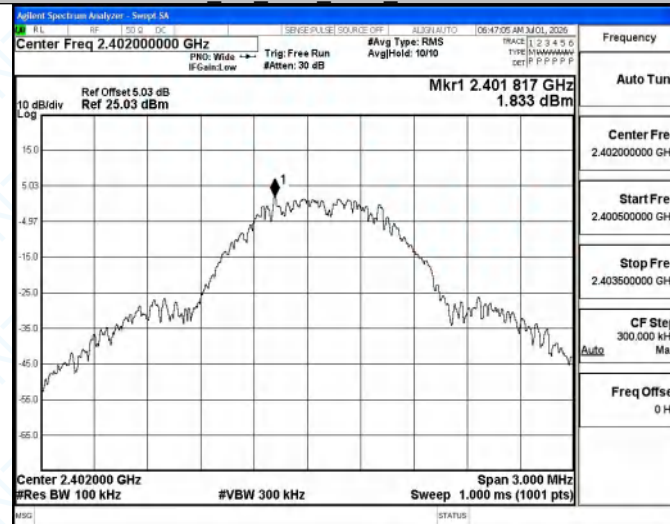
Test Result

TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	1.83	1.83	---	PASS
			30~1000	1.83	-67.03	≤ -18.17	PASS
			1000~26500	1.83	-21.75	≤ -18.17	PASS
		2440	Reference	1.43	1.43	---	PASS
			30~1000	1.43	-67.13	≤ -18.57	PASS
			1000~26500	1.43	-20.96	≤ -18.57	PASS
		2480	Reference	0.76	0.76	---	PASS
			30~1000	0.76	-67.54	≤ -19.24	PASS
			1000~26500	0.76	-24.29	≤ -19.24	PASS
BLE_2M	Ant1	2402	Reference	-0.29	-0.29	---	PASS
			30~1000	-0.29	-66.96	≤ -20.29	PASS
			1000~26500	-0.29	-25.61	≤ -20.29	PASS
		2440	Reference	-0.75	-0.75	---	PASS
			30~1000	-0.75	-67.43	≤ -20.75	PASS
			1000~26500	-0.75	-24.37	≤ -20.75	PASS
		2480	Reference	-1.20	-1.20	---	PASS
			30~1000	-1.20	-66.41	≤ -21.2	PASS
			1000~26500	-1.20	-25.91	≤ -21.2	PASS

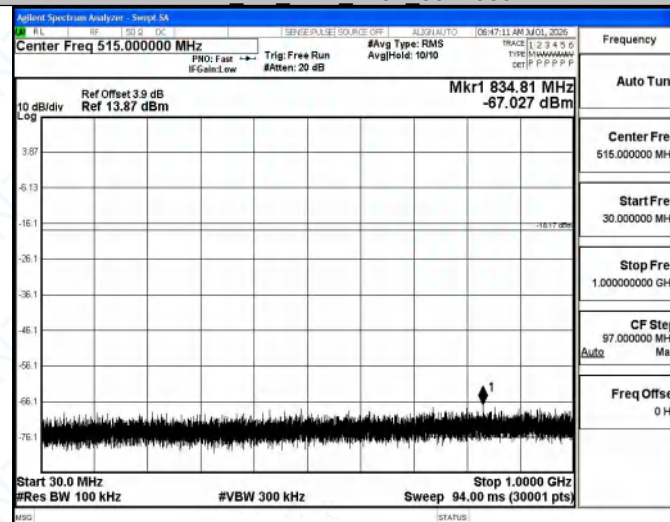


Test Graphs

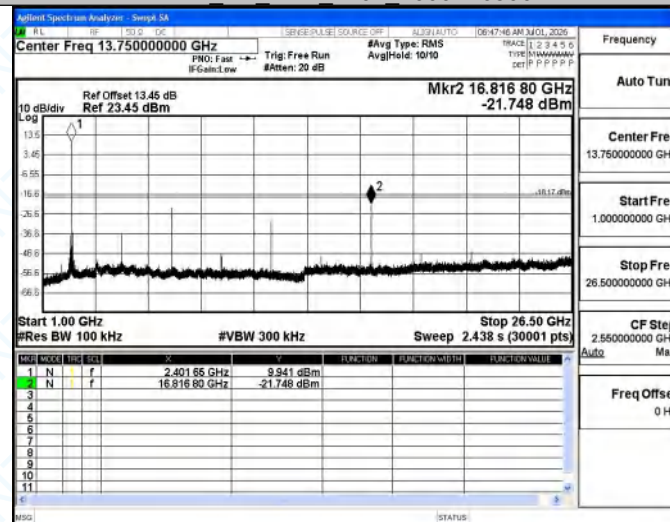
BLE 1M Ant1 2402 0~Reference



BLE 1M Ant1 2402 30~1000

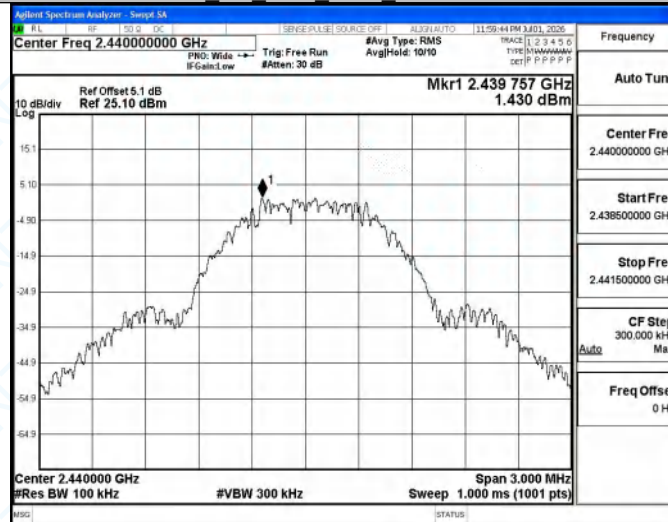


BLE 1M Ant1 2402 1000~26500

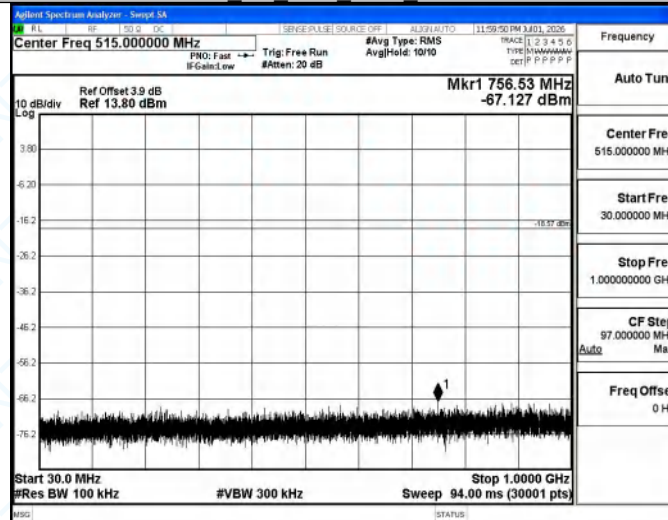




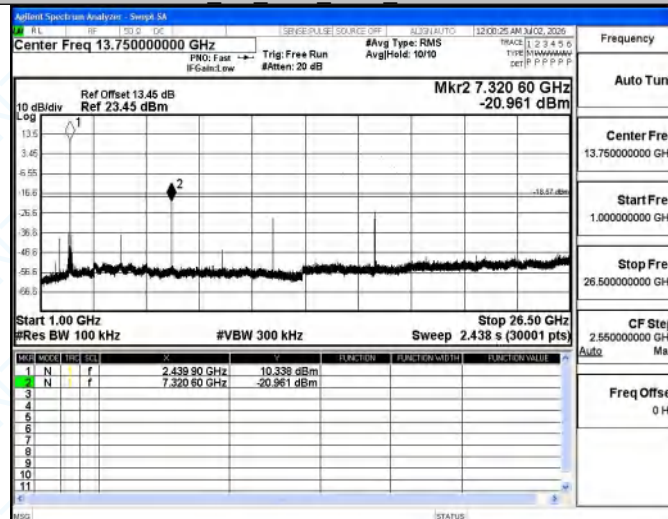
BLE 1M Ant1 2440 0~Reference



BLE 1M Ant1 2440 30~1000

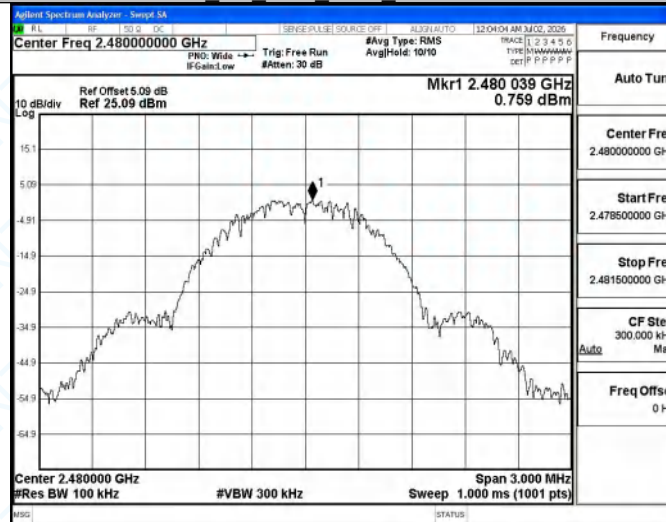


BLE 1M Ant1 2440 1000~26500

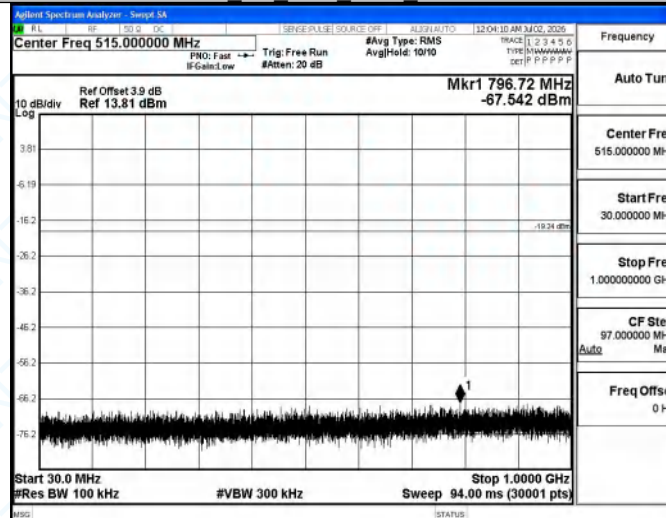




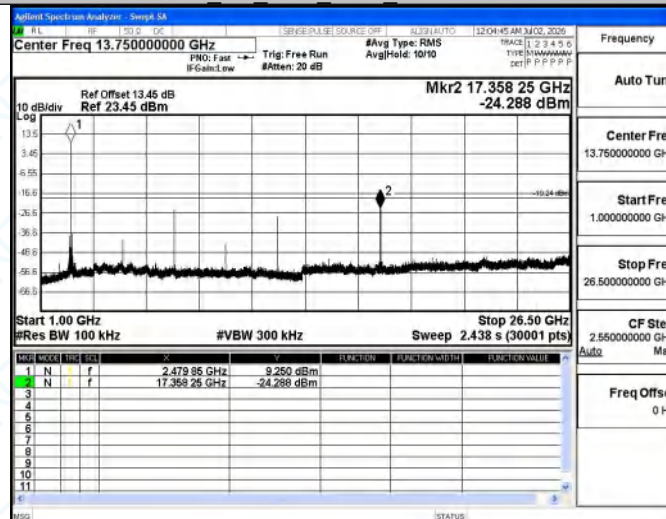
BLE 1M Ant1 2480 0~Reference

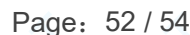


BLE 1M Ant1 2480 30~1000



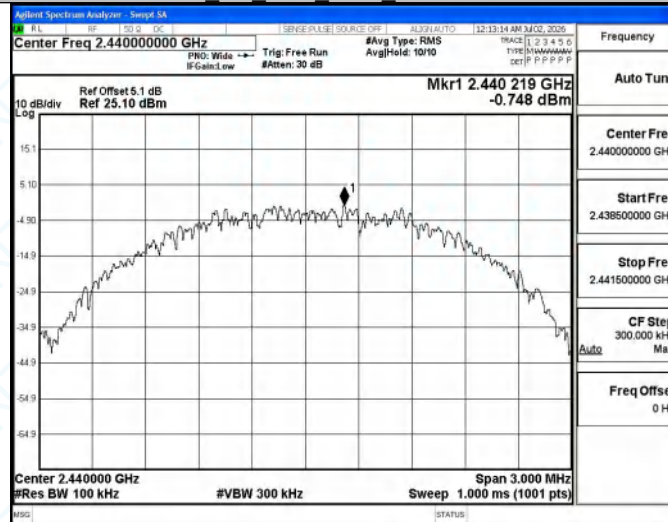
BLE 1M Ant1 2480 1000~26500



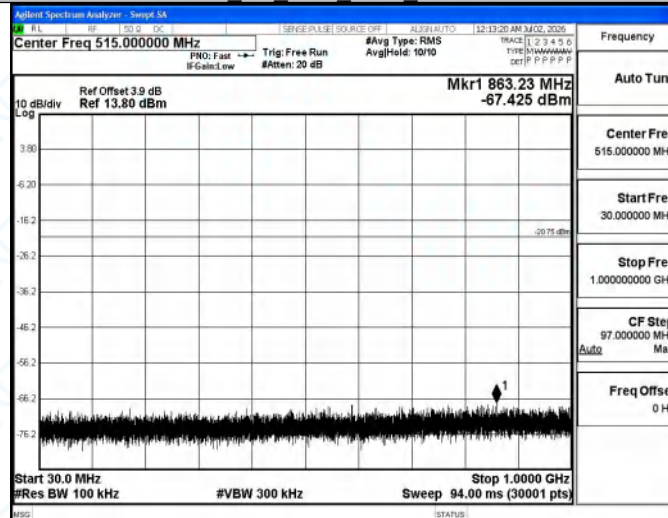




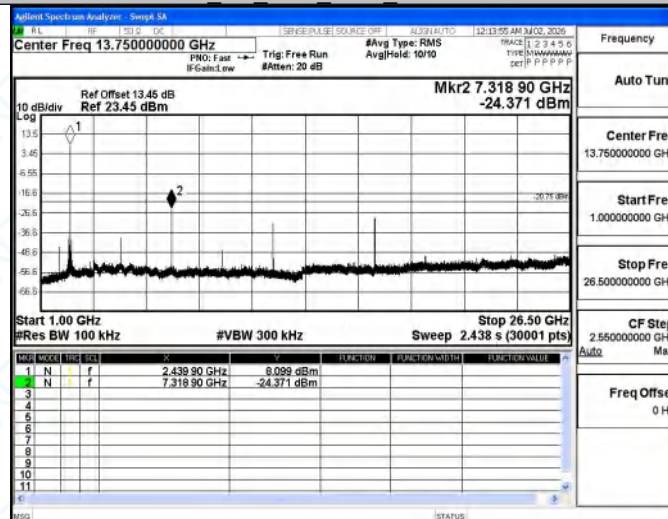
BLE 2M Ant1 2440 0~Reference



BLE 2M Ant1 2440 30~1000

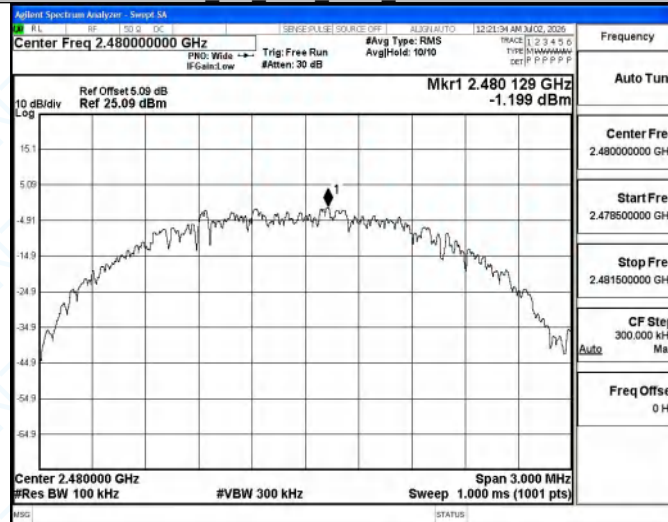


BLE 2M Ant1 2440 1000~26500

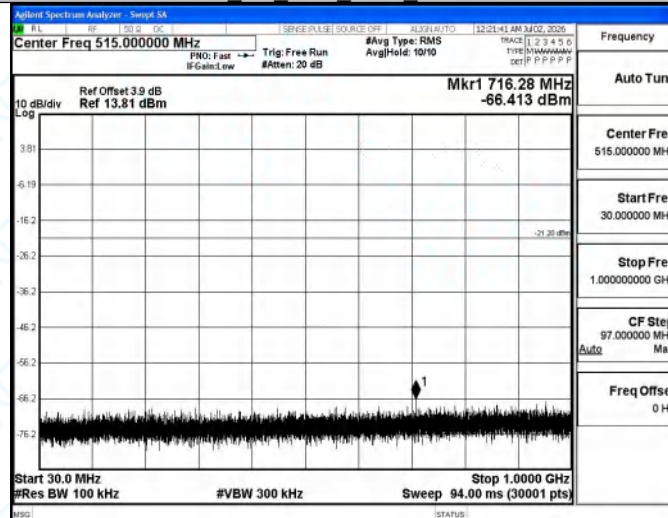




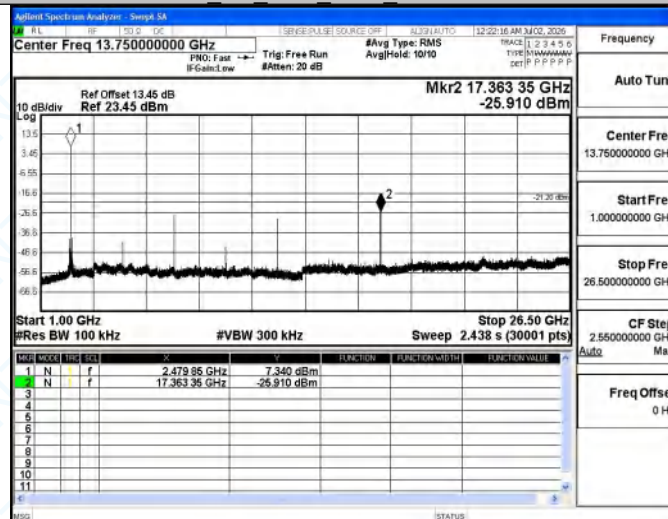
BLE 2M Ant1 2480 0~Reference



BLE 2M Ant1 2480 30~1000



BLE 2M Ant1 2480 1000~26500



---The End Report---

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