

Appendix Test Data for BLE (Conducted Measurement)

Product Name: Aroma Diffuser

Trade Mark: /

Test Model: DT-T2190A

FCC ID: 2A4P2-DT-2190A

Environmental Conditions

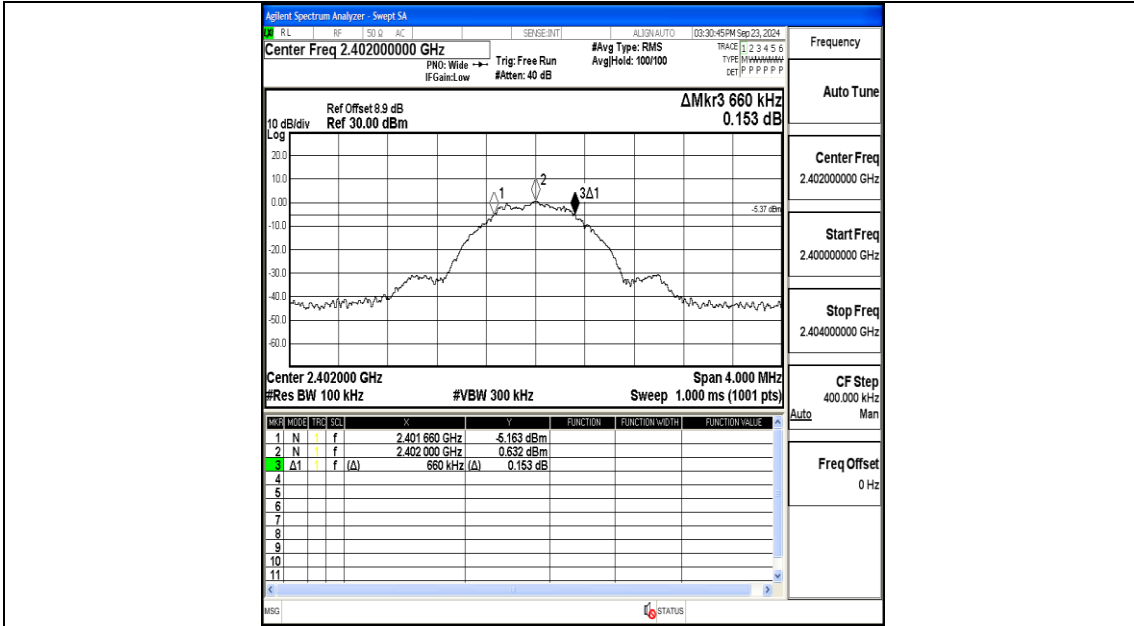
Temperature:	23.8℃
Relative Humidity:	58%
ATM Pressure:	100.0 kPa
Test Engineer:	Allen Lai
Supervised by:	Hugo Chen
NOTE	N/A

Appendix A: DTS Bandwidth

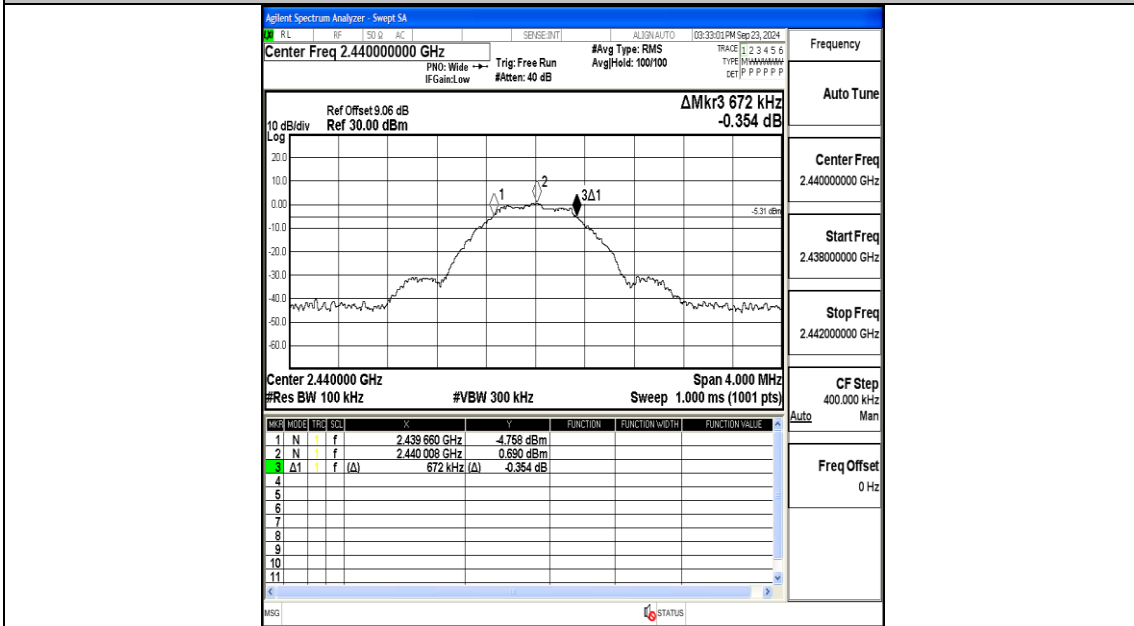
Test Result

Test Mode	Antenna	Frequency [MHz]	DTS BW [MHz]	FL [MHz]	FH [MHz]	Limit [MHz]	Verdict
BLE_1M	Ant1	2402	0.660	2401.660	2402.320	0.5	PASS
BLE_1M	Ant1	2440	0.672	2439.660	2440.332	0.5	PASS
BLE_1M	Ant1	2480	0.648	2479.664	2480.312	0.5	PASS
BLE_2M	Ant1	2402	1.068	2401.448	2402.516	0.5	PASS
BLE_2M	Ant1	2440	1.168	2439.352	2440.520	0.5	PASS
BLE_2M	Ant1	2480	1.112	2479.460	2480.572	0.5	PASS

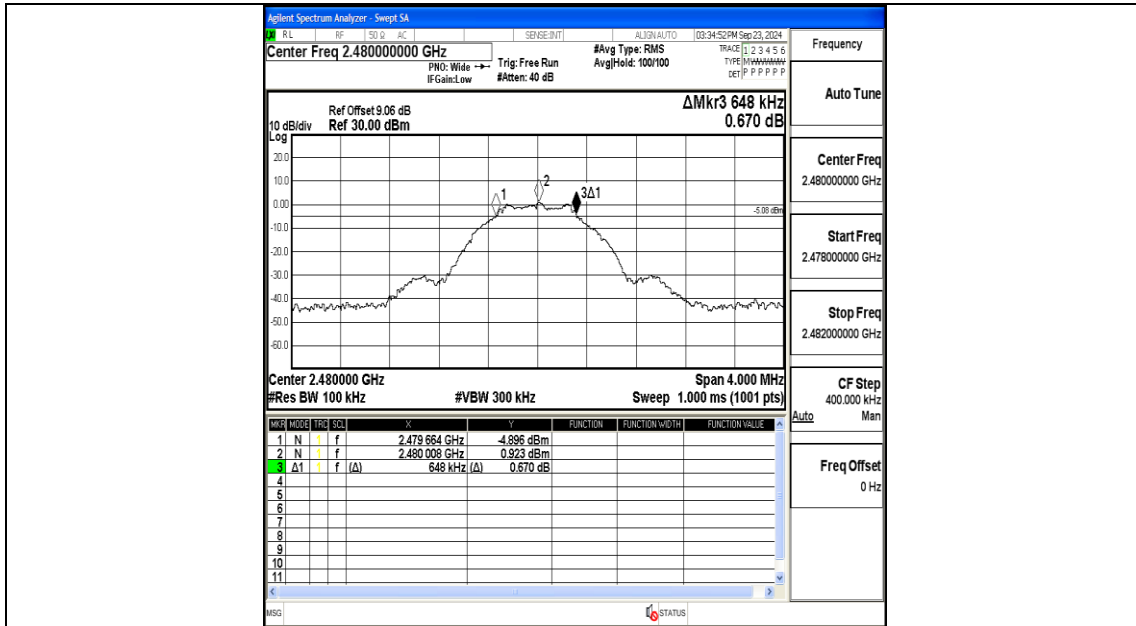
Test Graphs



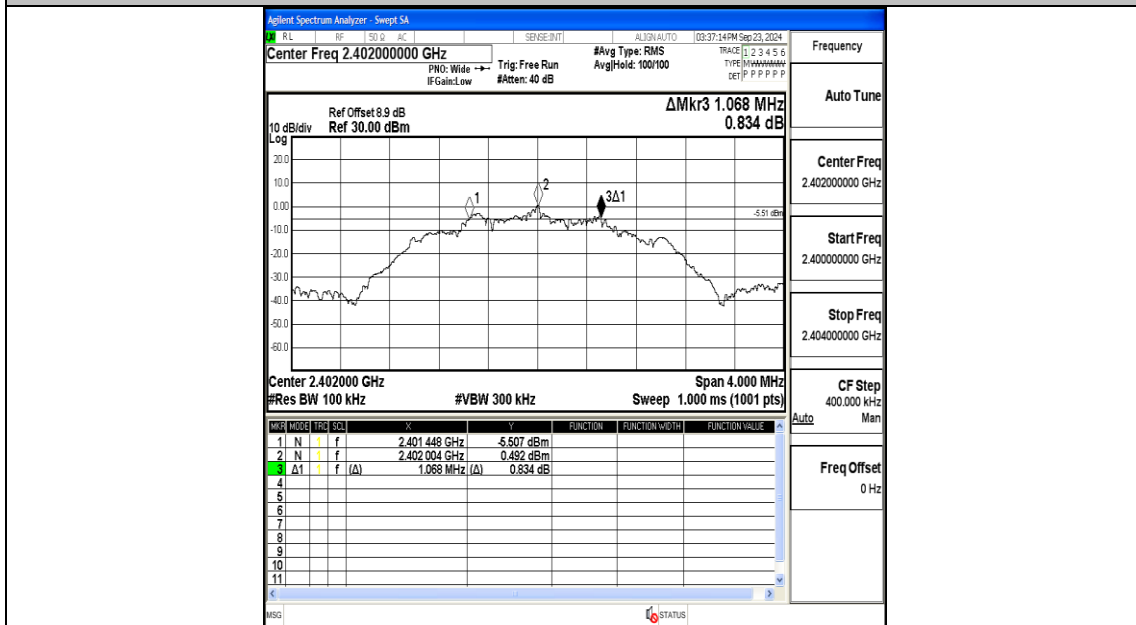
BLE_1M-Ant1-240-PASS



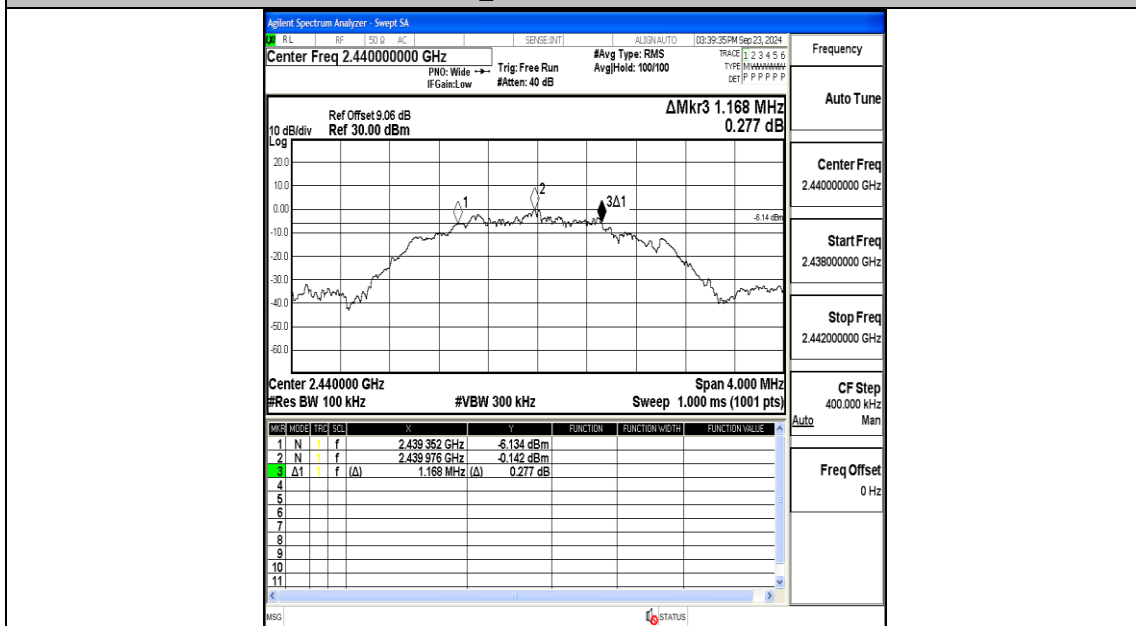
BLE_1M-Ant1-2440-PASS



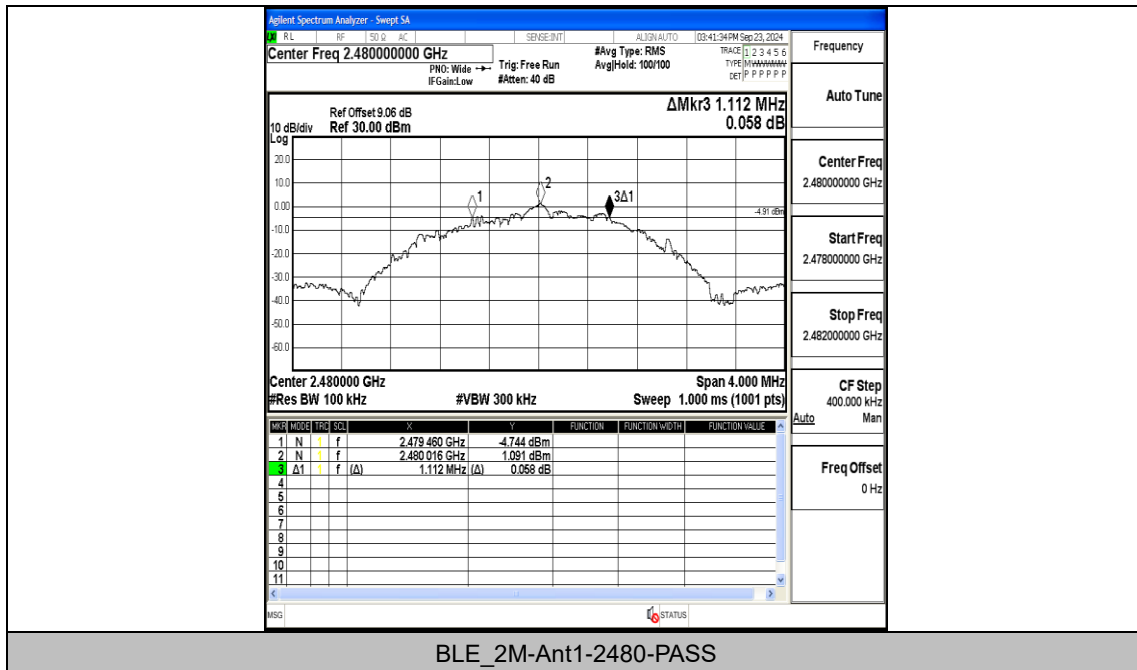
BLE_1M-Ant1-2480-PASS



BLE_2M-Ant1-2402-PASS



BLE_2M-Ant1-2440-PASS

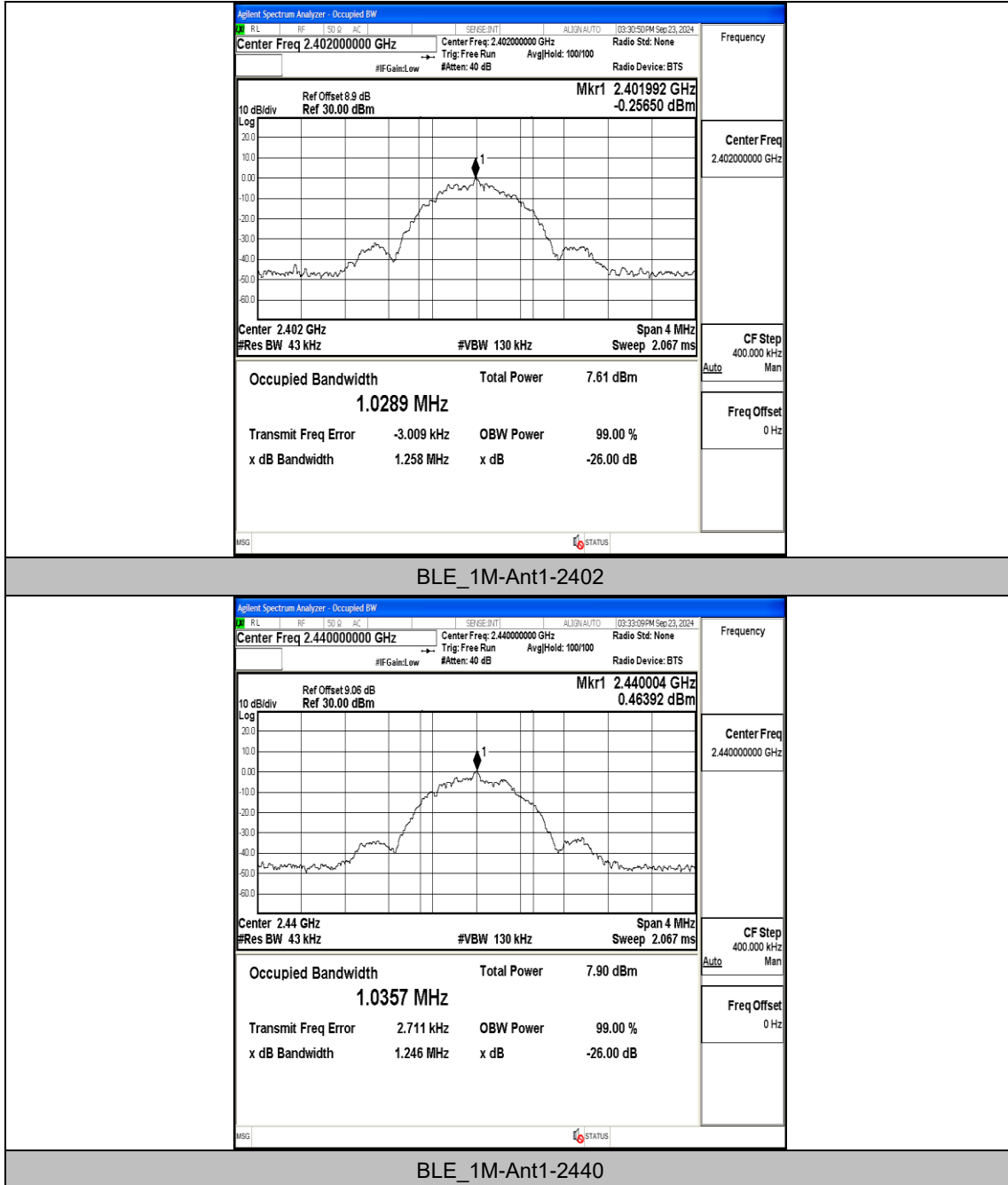


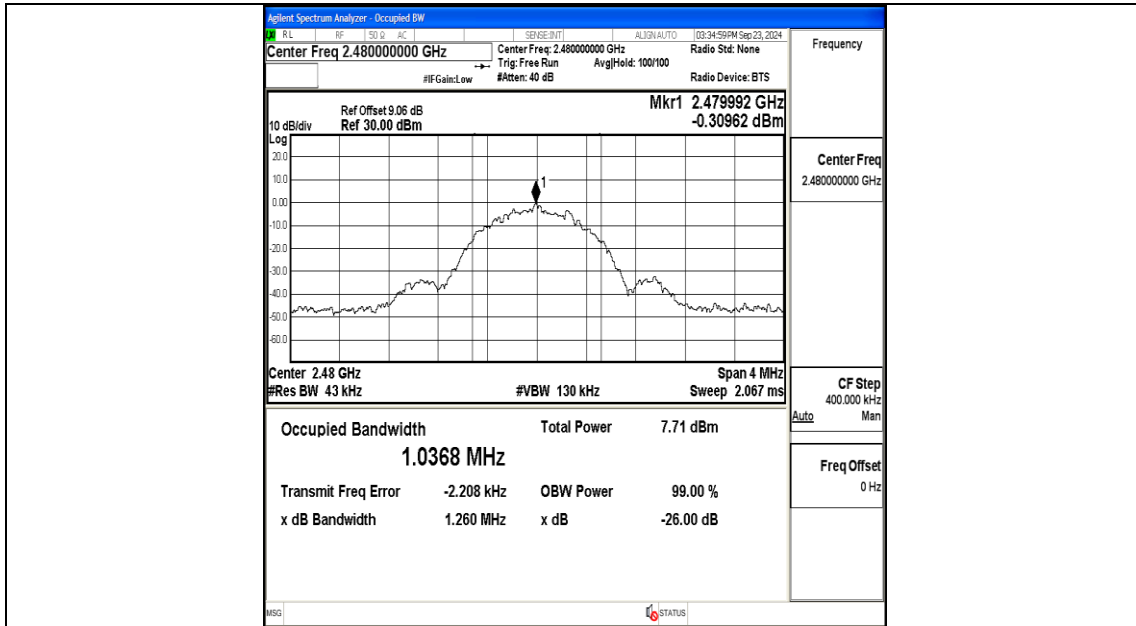
Appendix B: Occupied Channel Bandwidth

Test Result

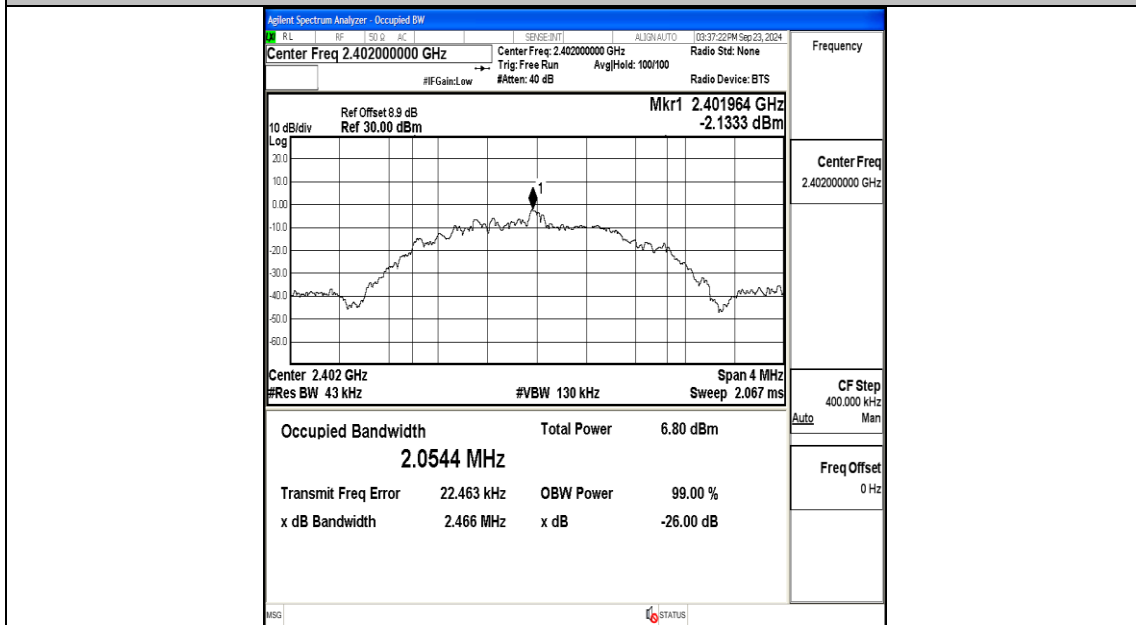
Test Mode	Antenna	Frequency [MHz]	OCB [MHz]	FL [MHz]	FH [MHz]	Limit [MHz]	Verdict
BLE_1M	Ant1	2402	1.0289	2401.4825	2402.5114	---	---
BLE_1M	Ant1	2440	1.0357	2439.4849	2440.5206	---	---
BLE_1M	Ant1	2480	1.0368	2479.4794	2480.5162	---	---
BLE_2M	Ant1	2402	2.0544	2400.9953	2403.0497	---	---
BLE_2M	Ant1	2440	2.0512	2438.9949	2441.0461	---	---
BLE_2M	Ant1	2480	2.0658	2478.9869	2481.0527	---	---

Test Graphs

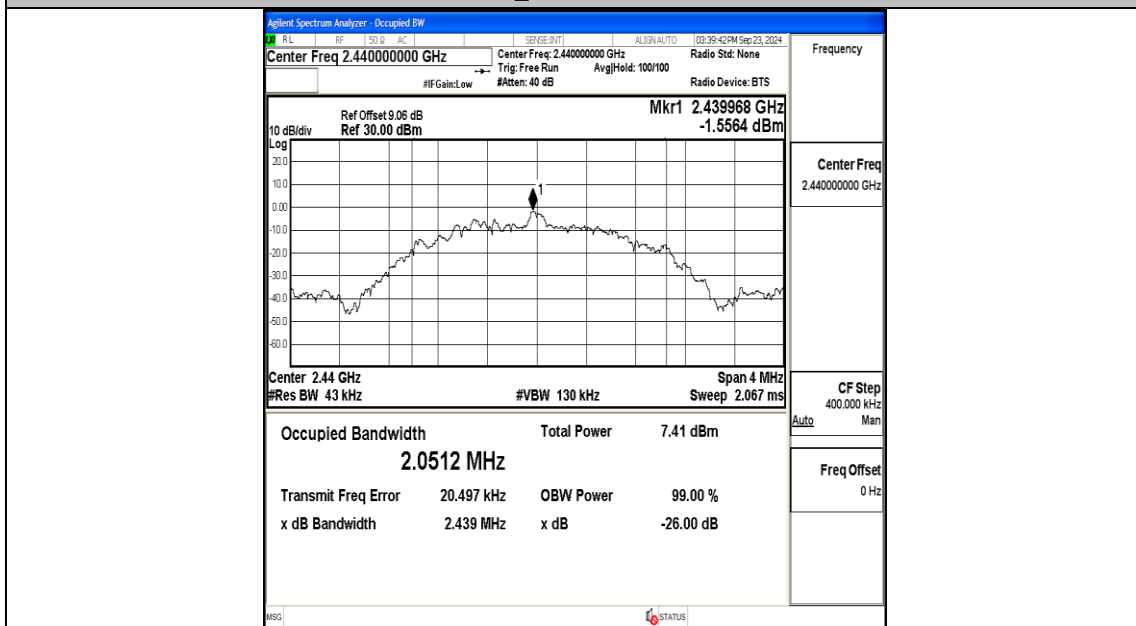




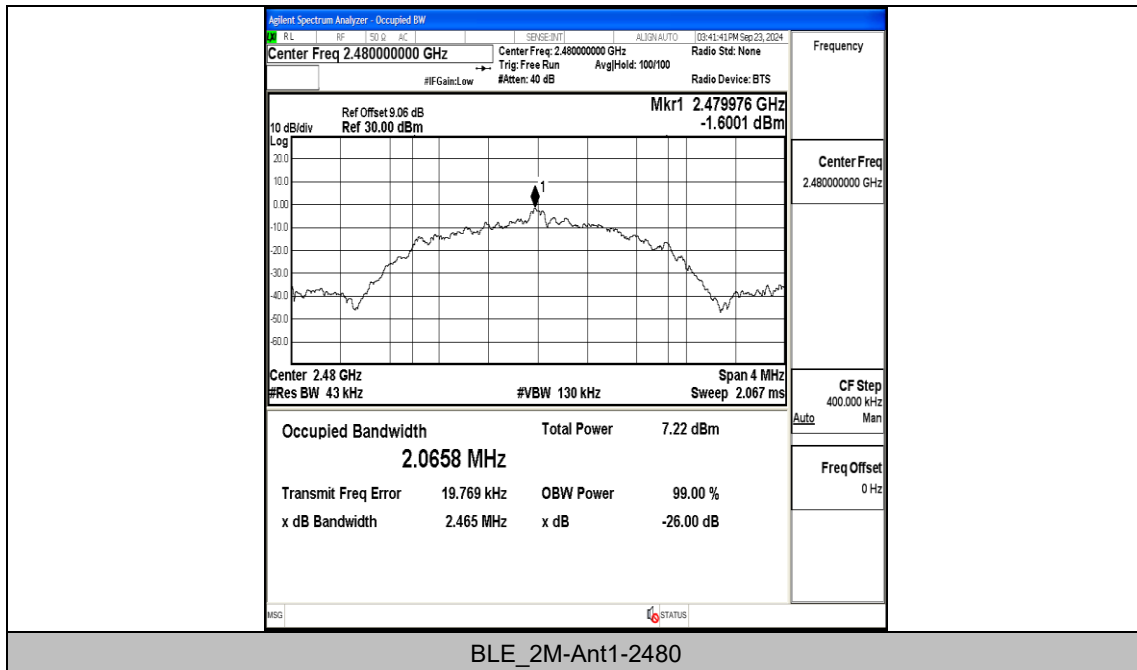
BLE_1M-Ant1-2480



BLE_2M-Ant1-2402



BLE_2M-Ant1-2440

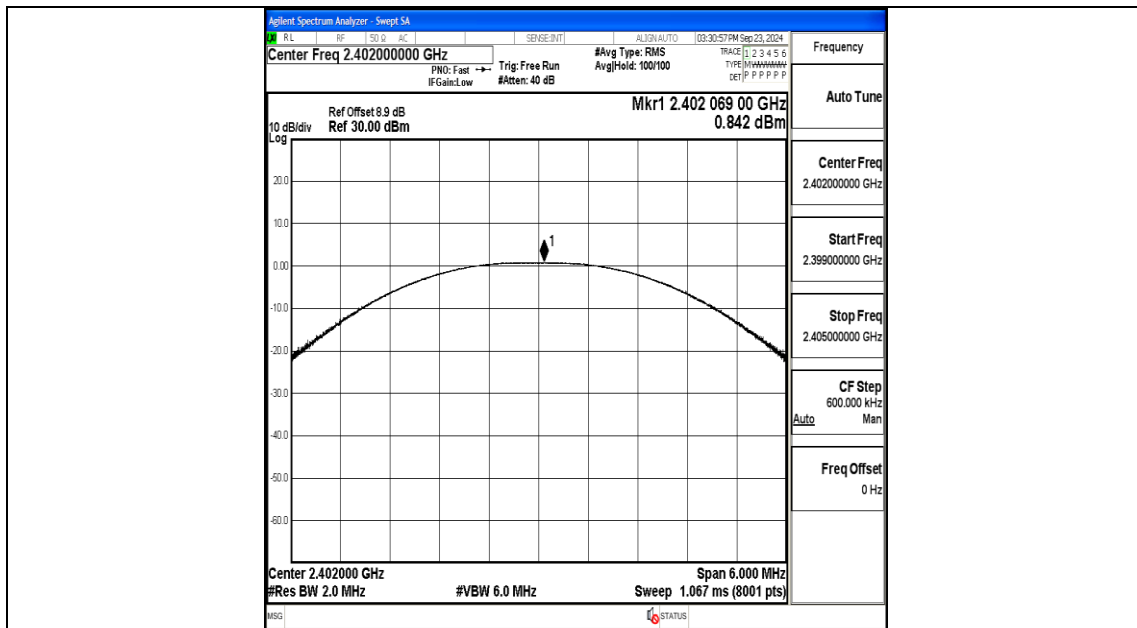


Appendix C: Maximum peak conducted output power

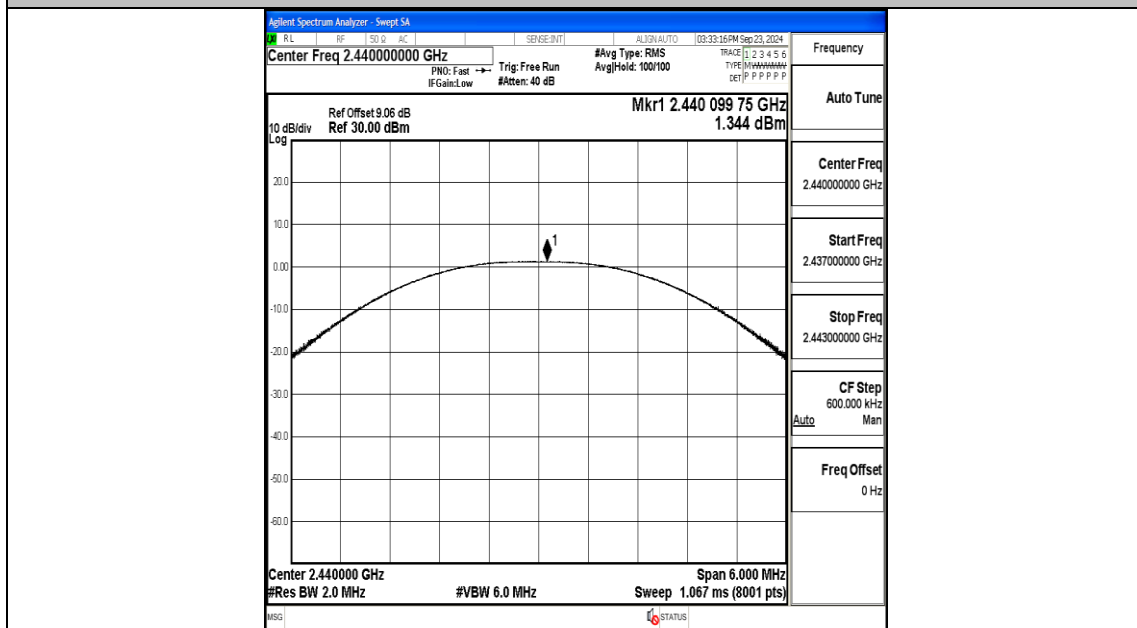
Test Result Peak

Test Mode	Antenna	Frequency [MHz]	Conducted Peak Power [dBm]	Conducted Limit [dBm]	Verdict
BLE_1M	Ant1	2402	0.84	≤30	PASS
BLE_1M	Ant1	2440	1.34	≤30	PASS
BLE_1M	Ant1	2480	1.44	≤30	PASS
BLE_2M	Ant1	2402	1.00	≤30	PASS
BLE_2M	Ant1	2440	1.50	≤30	PASS
BLE_2M	Ant1	2480	1.68	≤30	PASS

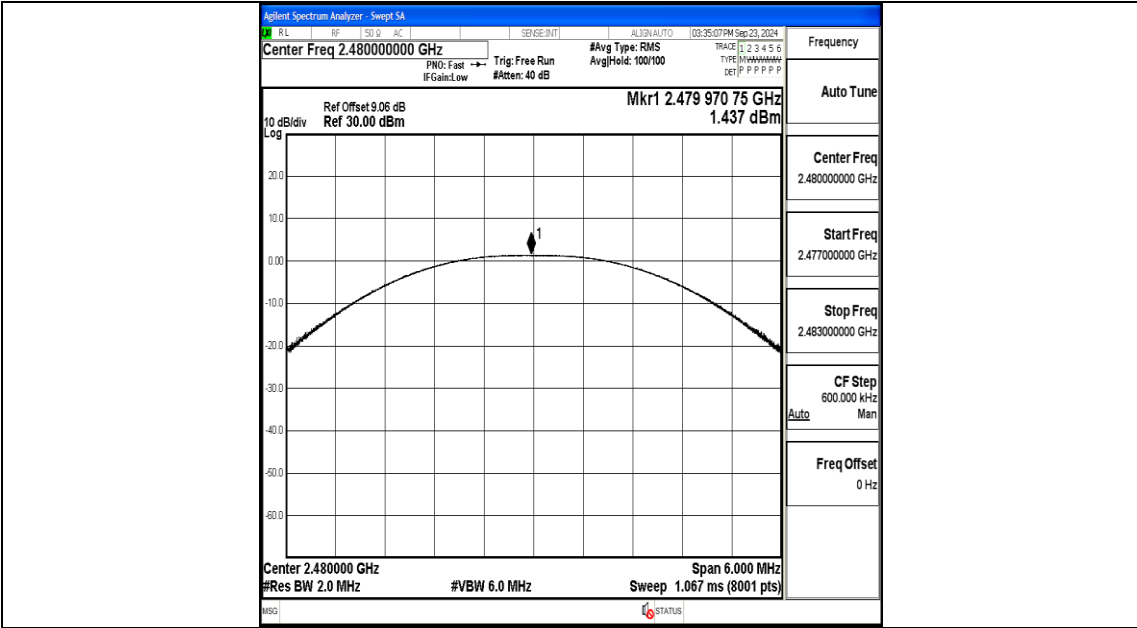
Test Graphs Peak



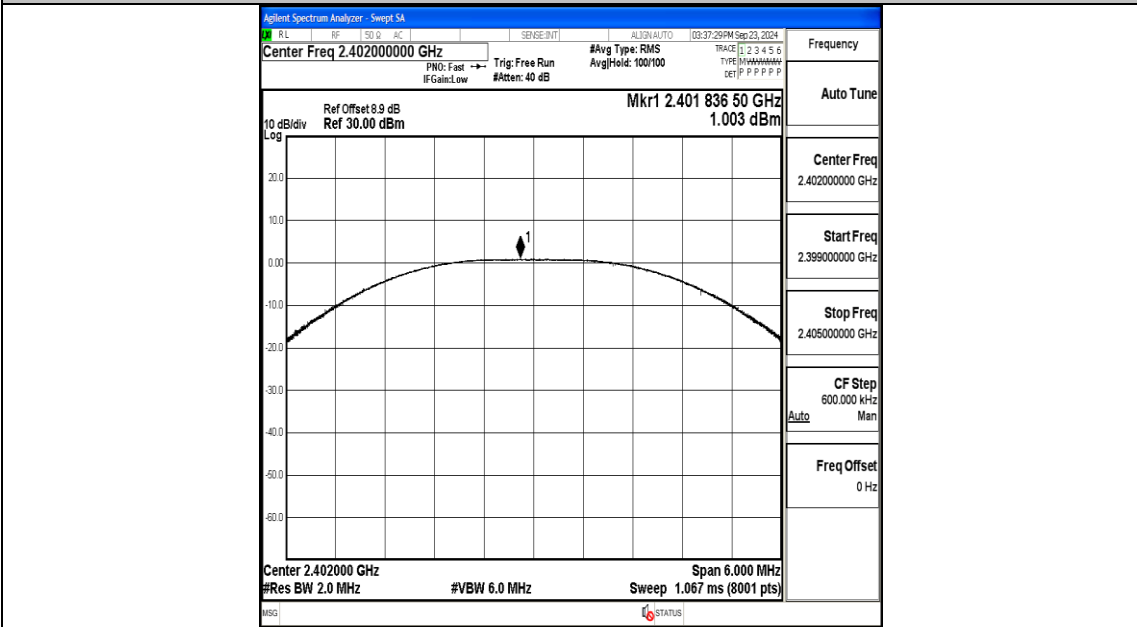
BLE_1M-Ant1-2402-PASS



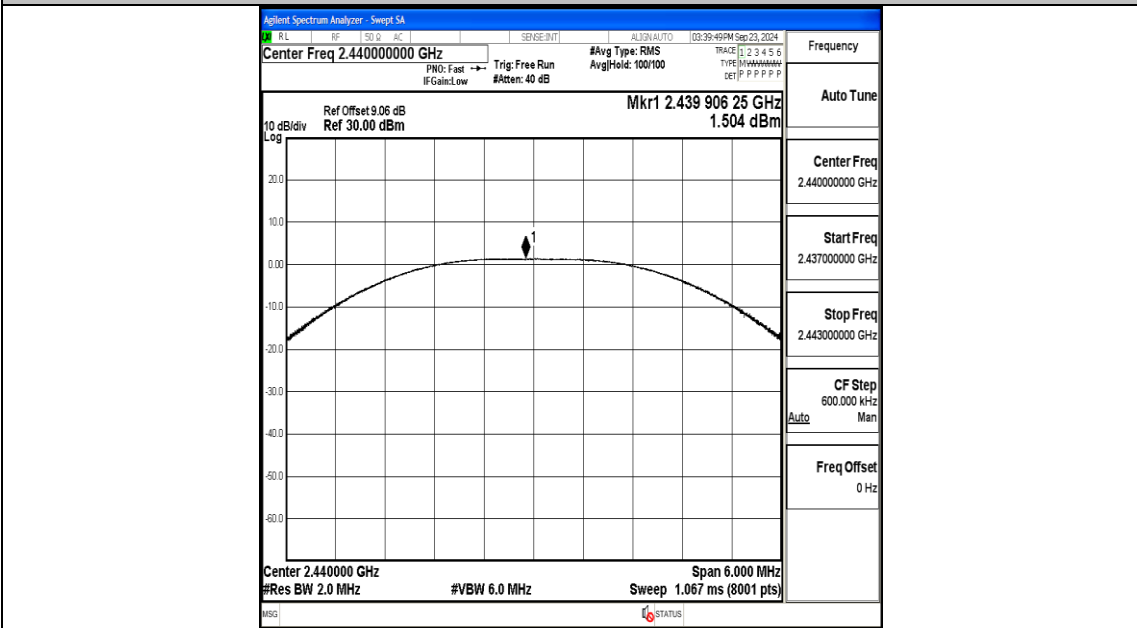
BLE_1M-Ant1-2440-PASS



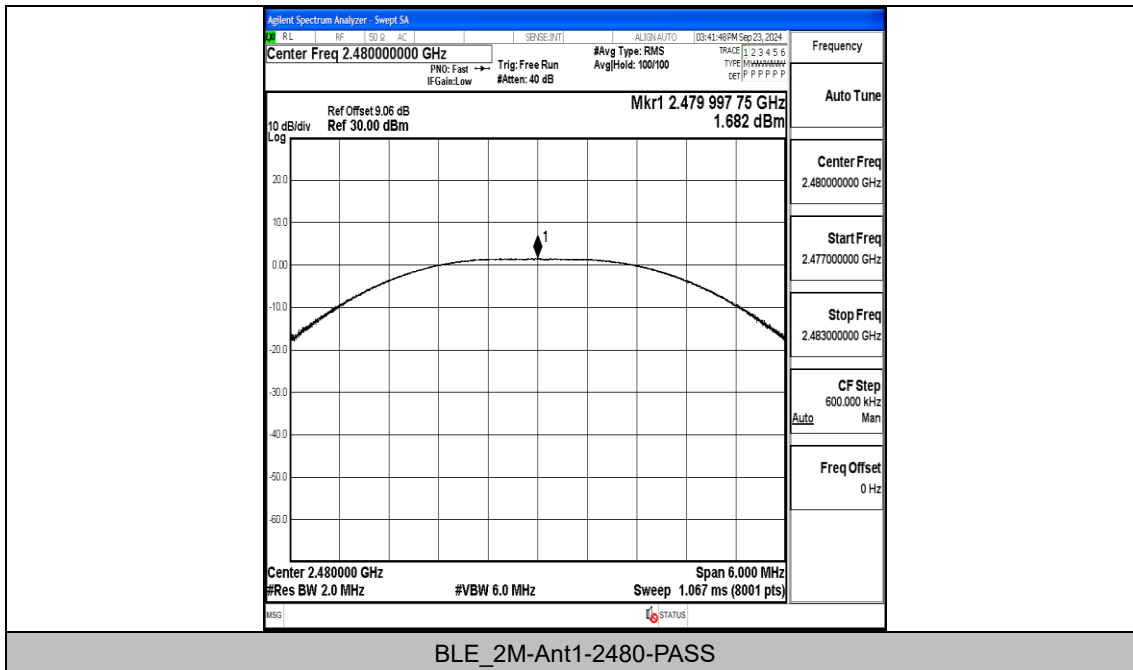
BLE_1M-Ant1-2480-PASS



BLE_2M-Ant1-2402-PASS



BLE_2M-Ant1-2440-PASS

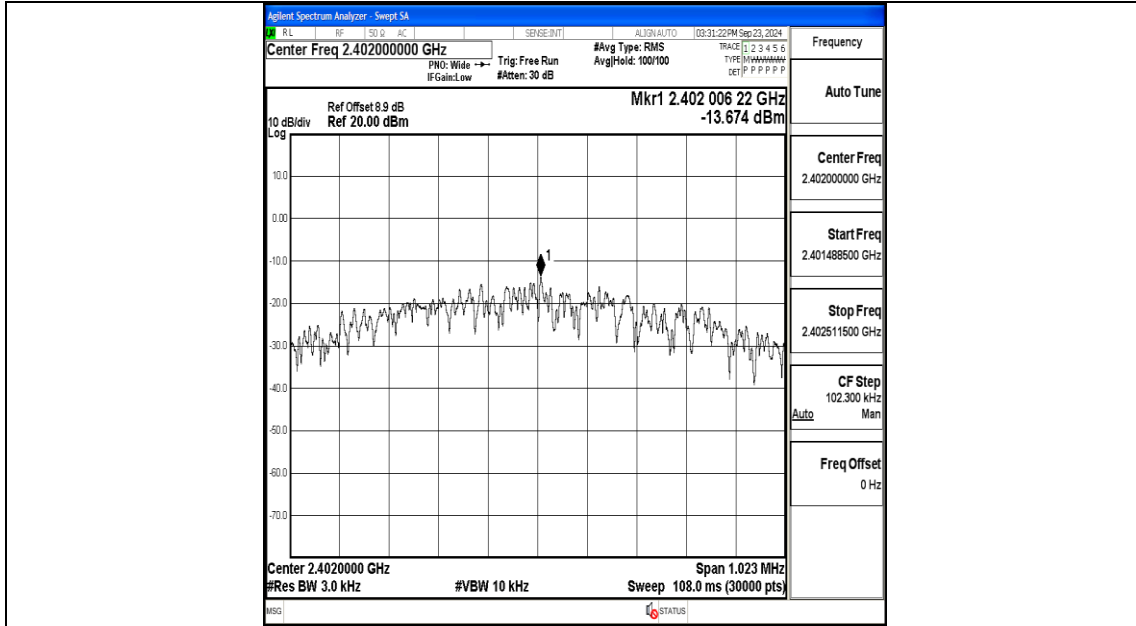


Appendix D: Maximum peak power spectral density

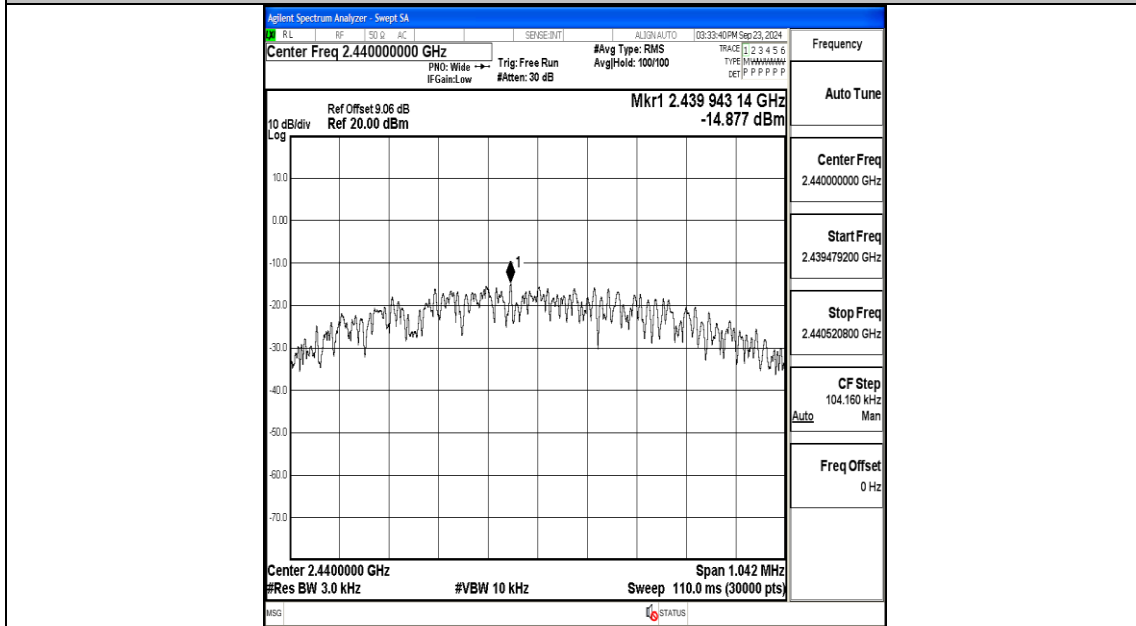
Test Result

Test Mode	Antenna	Frequency [MHz]	Result [dBm/3kHz]	Limit [dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-13.67	≤8.00	PASS
BLE_1M	Ant1	2440	-14.88	≤8.00	PASS
BLE_1M	Ant1	2480	-14.89	≤8.00	PASS
BLE_2M	Ant1	2402	-16.09	≤8.00	PASS
BLE_2M	Ant1	2440	-14.86	≤8.00	PASS
BLE_2M	Ant1	2480	-16.20	≤8.00	PASS

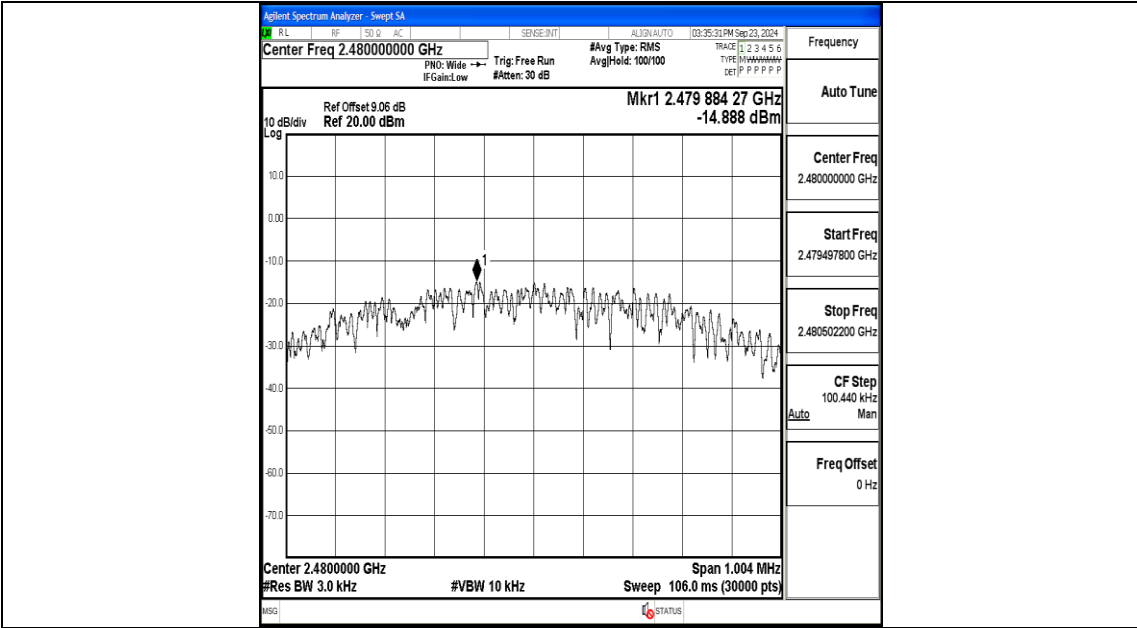
Test Graphs



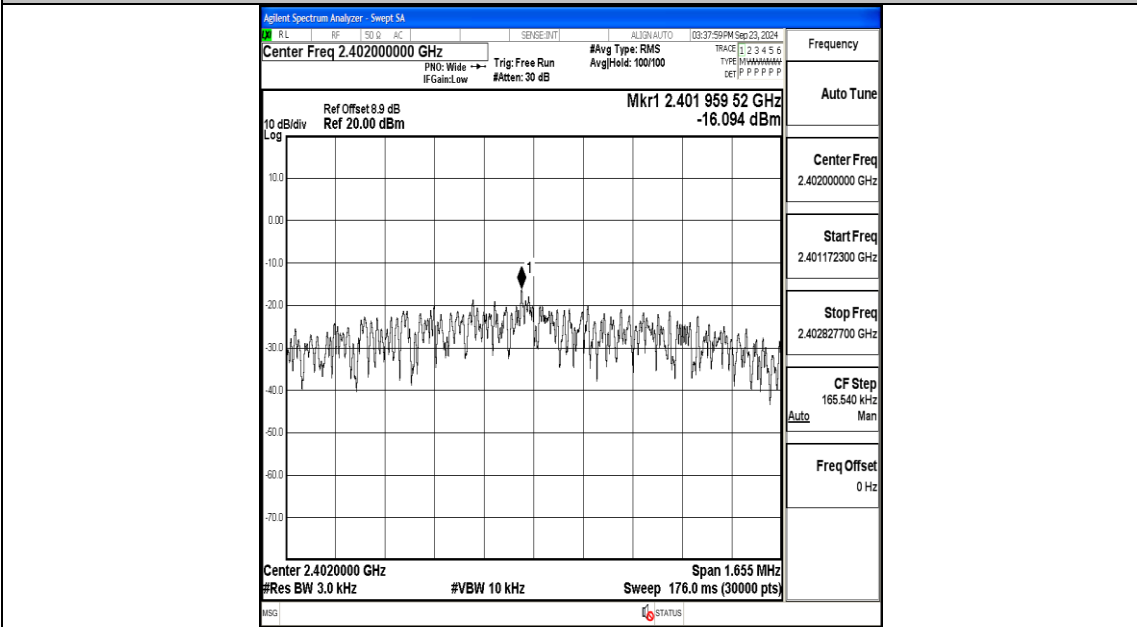
BLE_1M-Ant1-2402-PASS



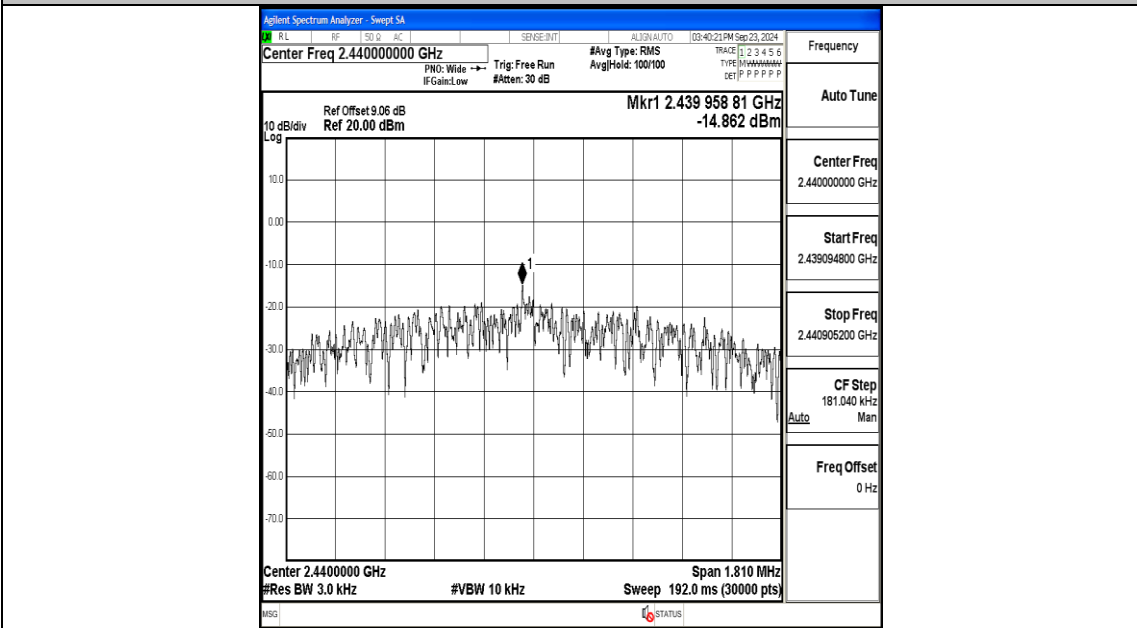
BLE_1M-Ant1-2440-PASS



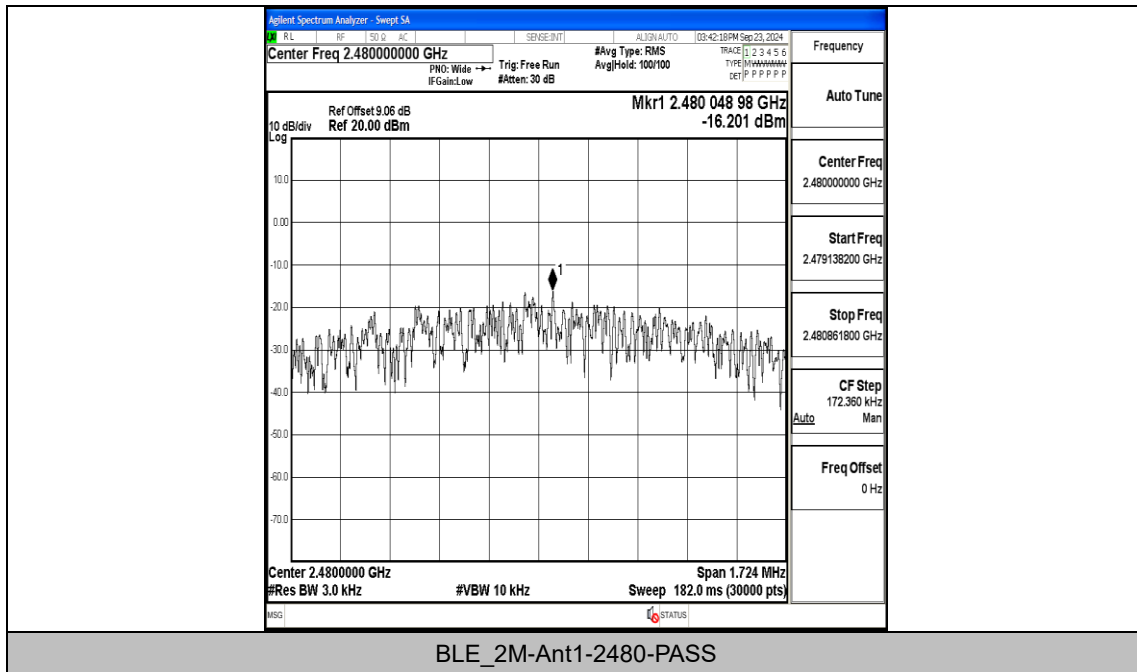
BLE_1M-Ant1-2480-PASS



BLE_2M-Ant1-2402-PASS



BLE_2M-Ant1-2440-PASS

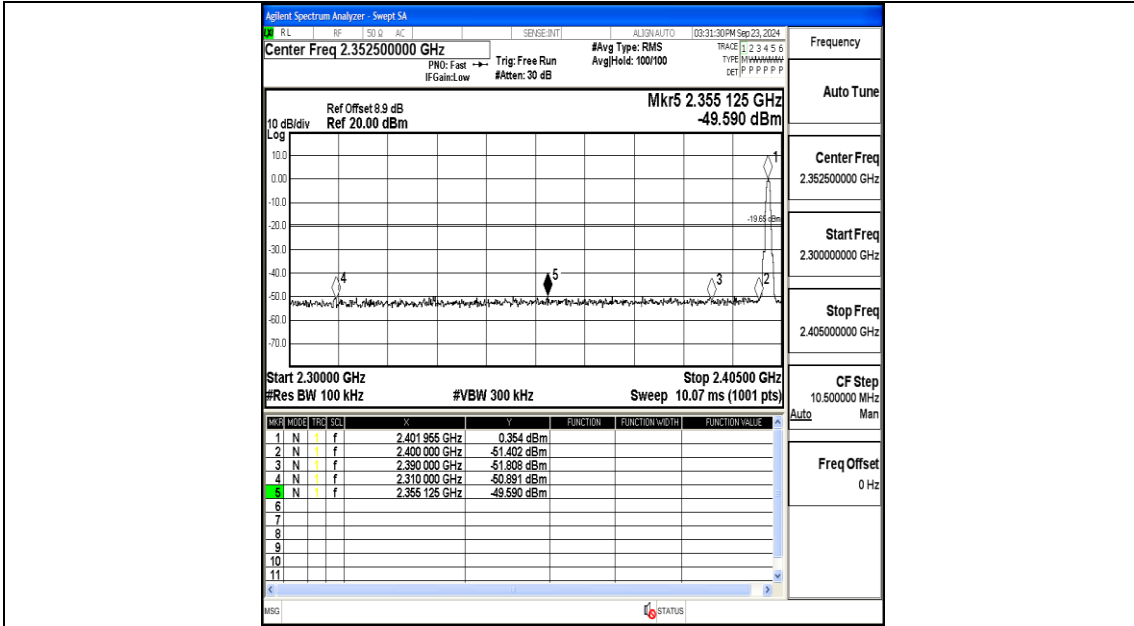


Appendix E: Band edge measurements

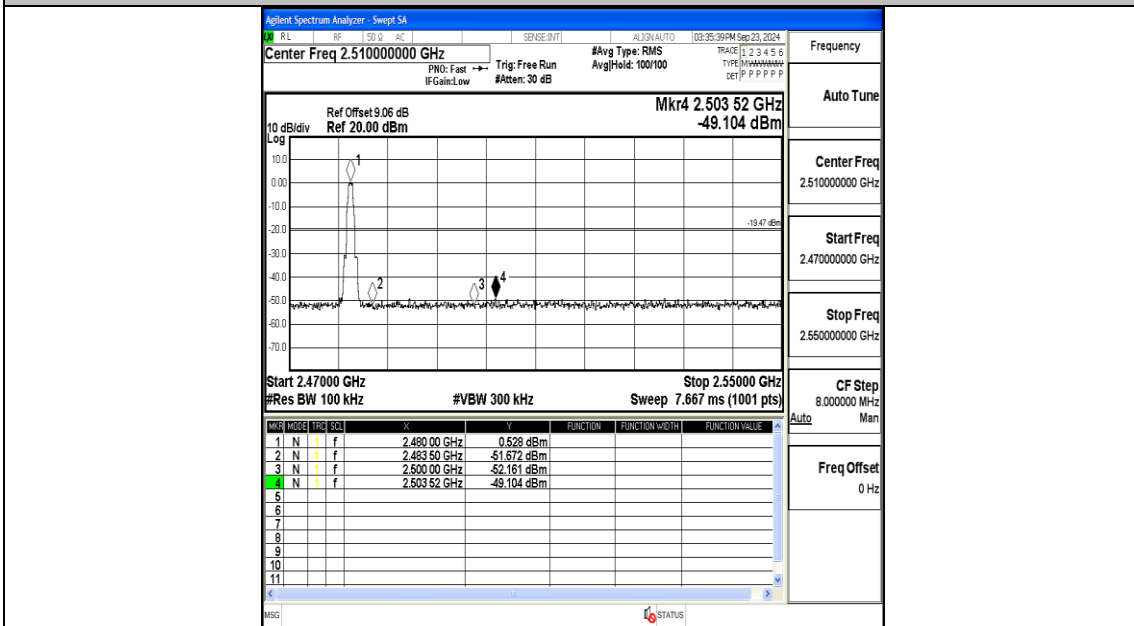
Test Result

Test Mode	Antenna	Ch.Name	Frequency [MHz]	Ref. Level [dBm]	Result [dBm]	Limit [dBm]	Verdict
BLE_1M	Ant1	Low	2402	0.35	-49.59	≤-19.65	PASS
BLE_1M	Ant1	High	2480	0.53	-49.1	≤-19.47	PASS
BLE_2M	Ant1	Low	2402	0.17	-33.93	≤-19.83	PASS
BLE_2M	Ant1	High	2480	1.02	-48.82	≤-18.98	PASS

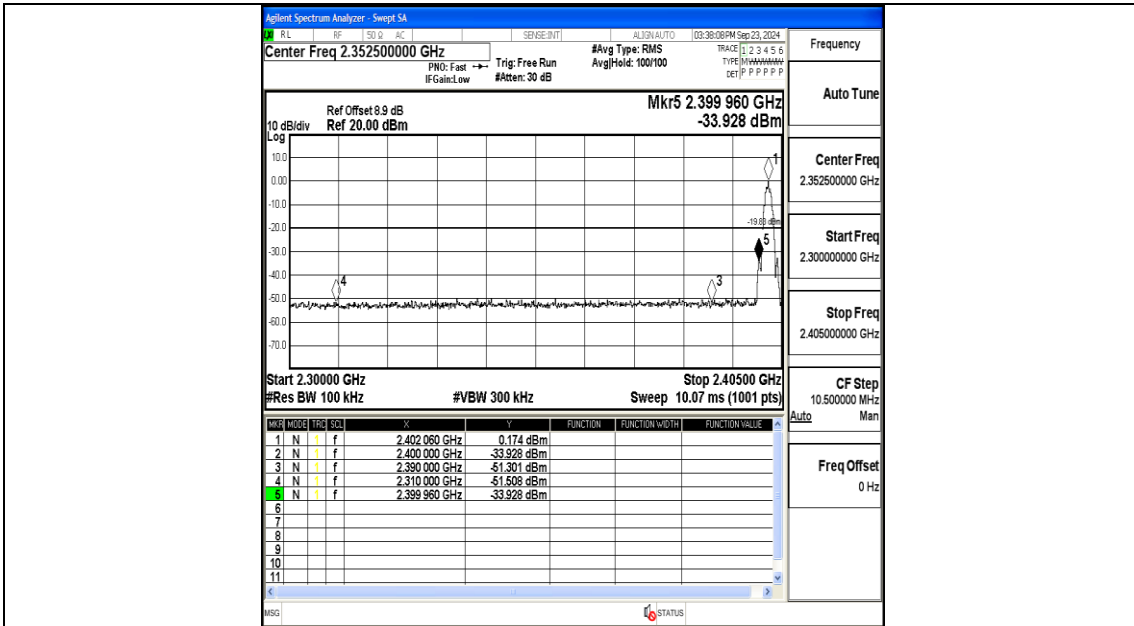
Test Graphs



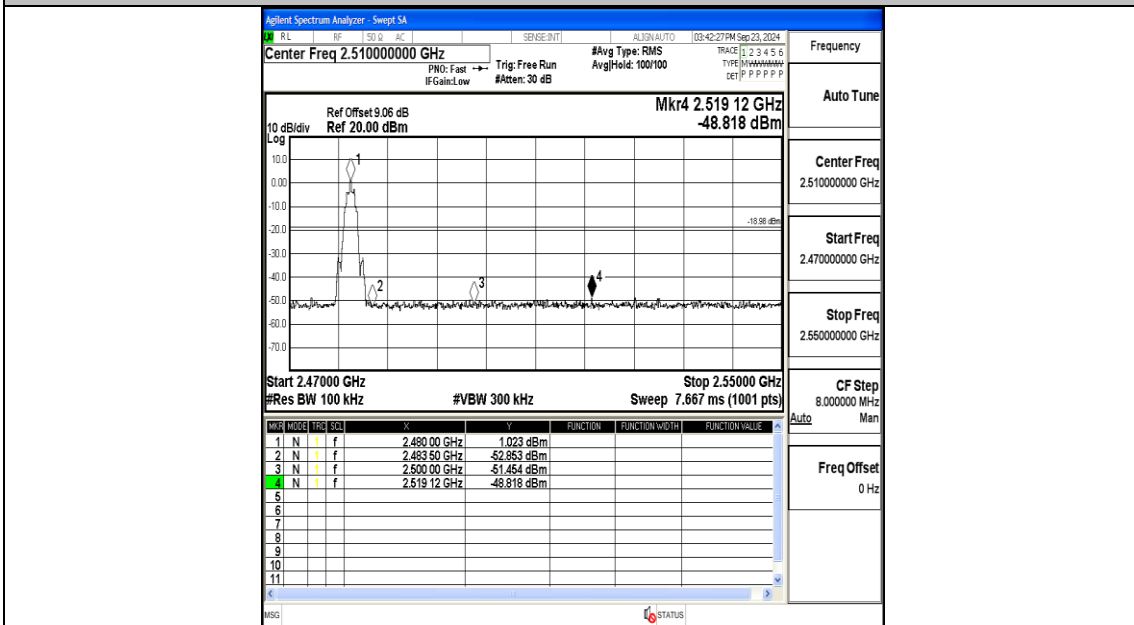
BLE_1M-Ant1-2402-PASS



BLE_1M-Ant1-2480-PASS



BLE_2M-Ant1-2402-PASS



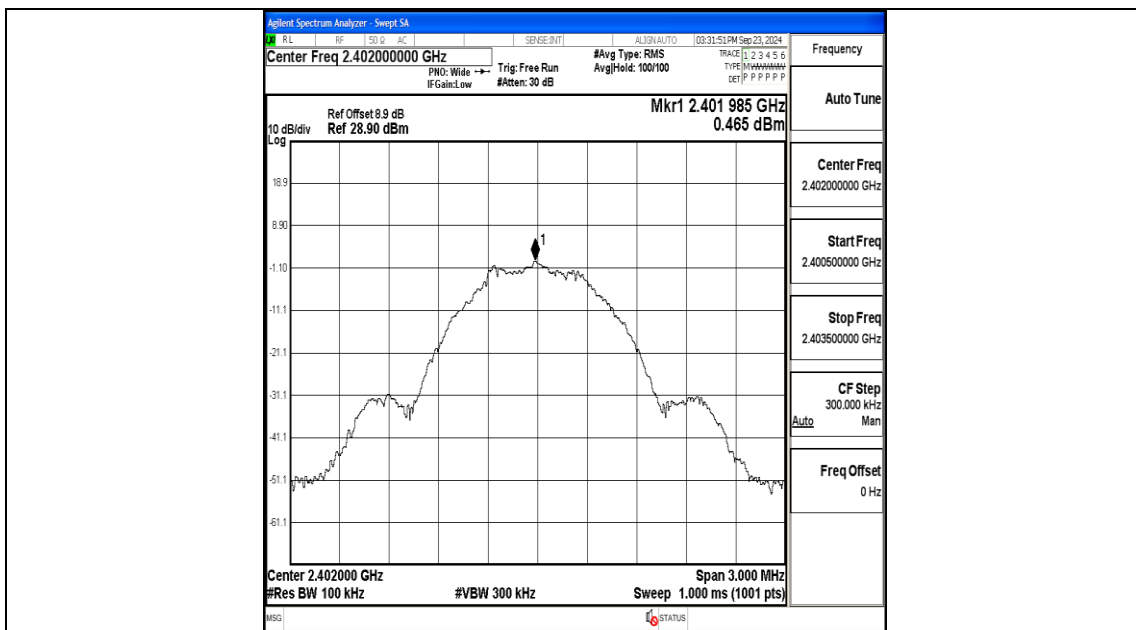
BLE_2M-Ant1-2480-PASS

Appendix F: Conducted Spurious Emission

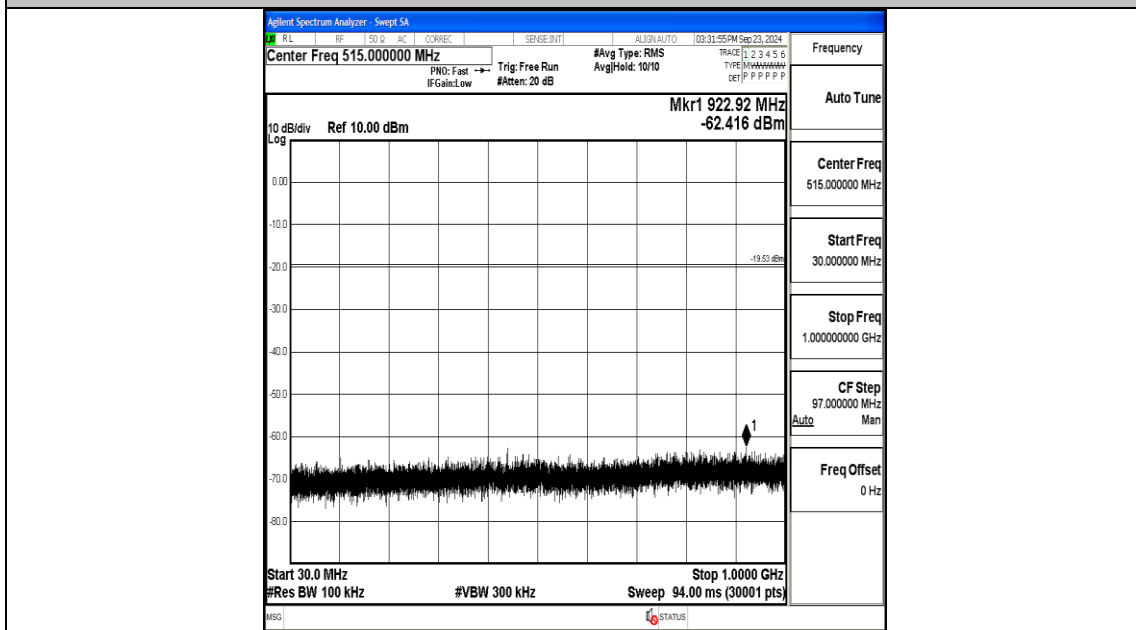
Test Result

Test Mode	Antenna	Frequency [MHz]	Freq. Range [MHz]	Ref. Level [dBm]	Result [dBm]	Limit [dBm]	Verdict
BLE_1M	Ant1	2402	0~Reference	0.47	0.47	---	PASS
BLE_1M	Ant1	2402	30~1000	0.47	-62.42	≤-19.53	PASS
BLE_1M	Ant1	2402	1000~26500	0.47	-45.78	≤-19.53	PASS
BLE_1M	Ant1	2440	0~Reference	0.11	0.11	---	PASS
BLE_1M	Ant1	2440	30~1000	0.11	-62.7	≤-19.89	PASS
BLE_1M	Ant1	2440	1000~26500	0.11	-45.29	≤-19.89	PASS
BLE_1M	Ant1	2480	0~Reference	1.24	1.24	---	PASS
BLE_1M	Ant1	2480	30~1000	1.24	-62.19	≤-18.76	PASS
BLE_1M	Ant1	2480	1000~26500	1.24	-44.55	≤-18.76	PASS
BLE_2M	Ant1	2402	0~Reference	0.13	0.13	---	PASS
BLE_2M	Ant1	2402	30~1000	0.13	-62.78	≤-19.87	PASS
BLE_2M	Ant1	2402	1000~26500	0.13	-45	≤-19.87	PASS
BLE_2M	Ant1	2440	0~Reference	1.08	1.08	---	PASS
BLE_2M	Ant1	2440	30~1000	1.08	-62.9	≤-18.92	PASS
BLE_2M	Ant1	2440	1000~26500	1.08	-45.05	≤-18.92	PASS
BLE_2M	Ant1	2480	0~Reference	1.09	1.09	---	PASS
BLE_2M	Ant1	2480	30~1000	1.09	-62.44	≤-18.91	PASS
BLE_2M	Ant1	2480	1000~26500	1.09	-45.45	≤-18.91	PASS

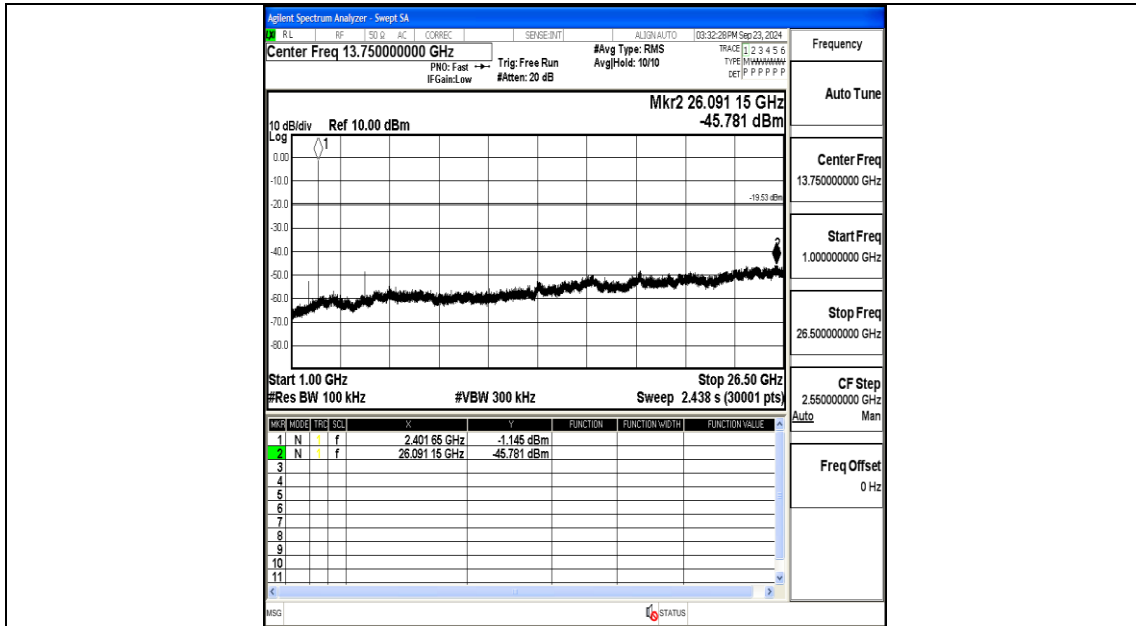
Test Graphs



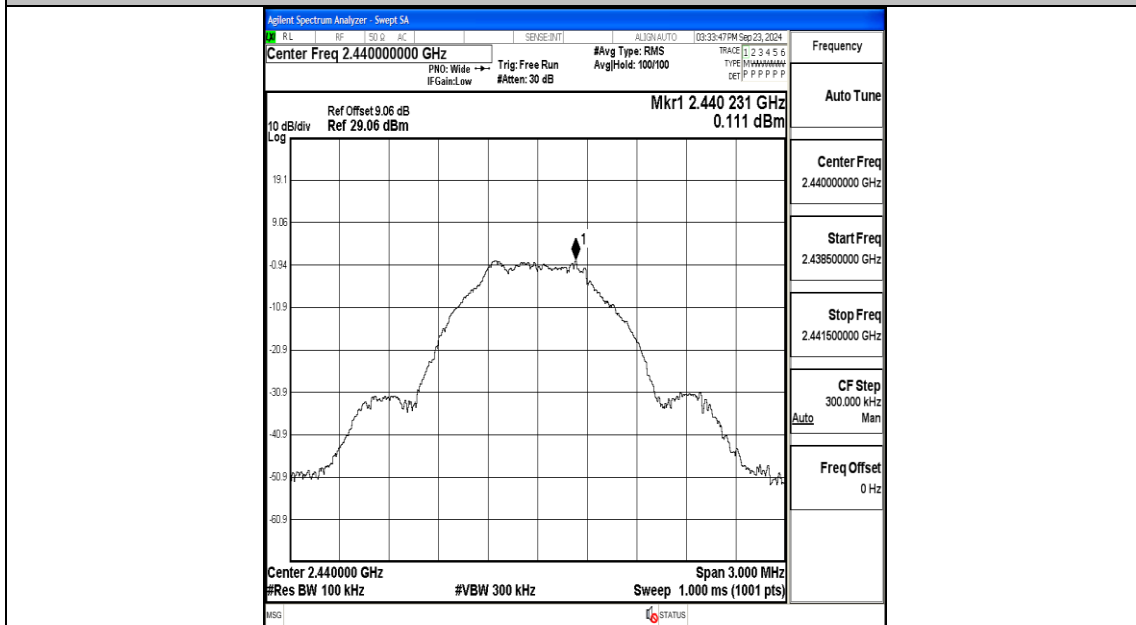
BLE_1M-Ant1-2402-0~Reference-PASS



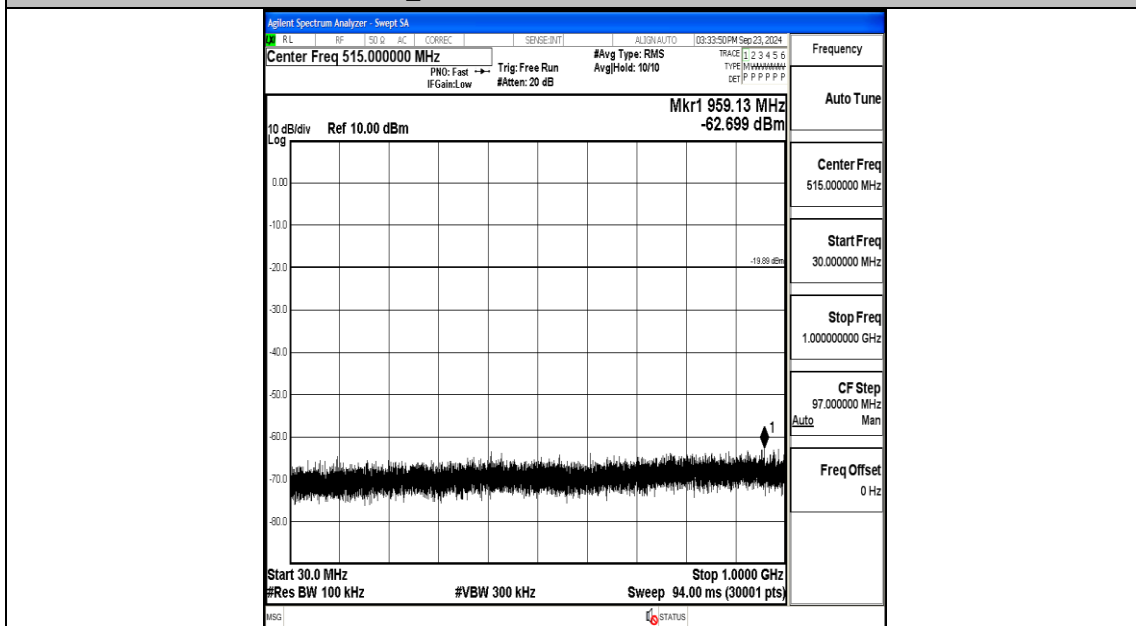
BLE_1M-Ant1-2402-30~1000-PASS



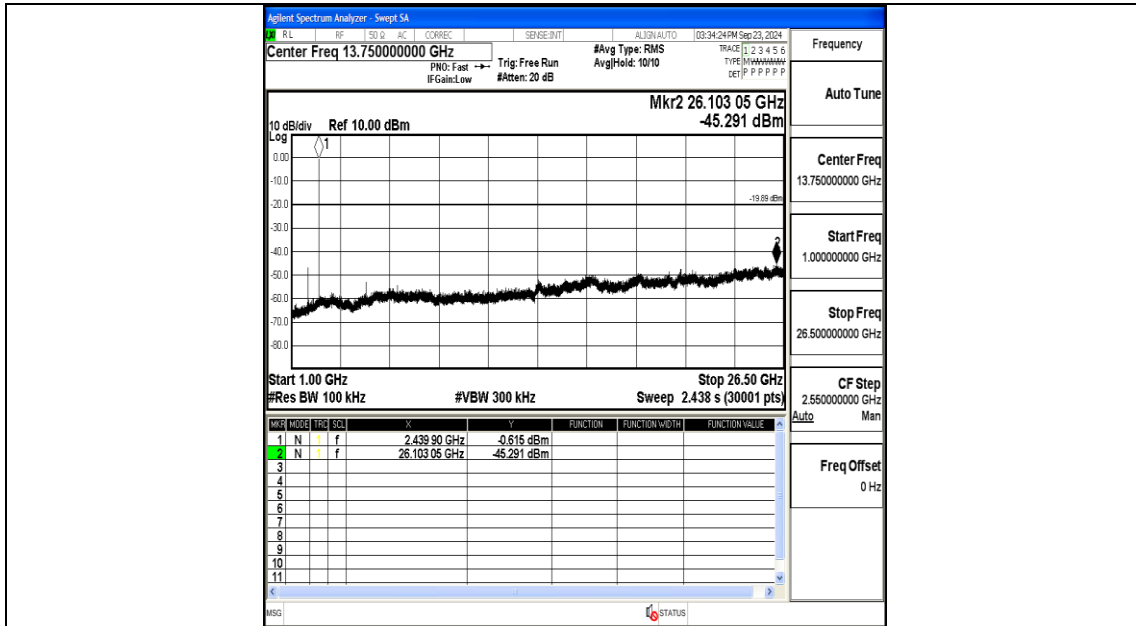
BLE_1M-Ant1-2402-1000~26500-PASS



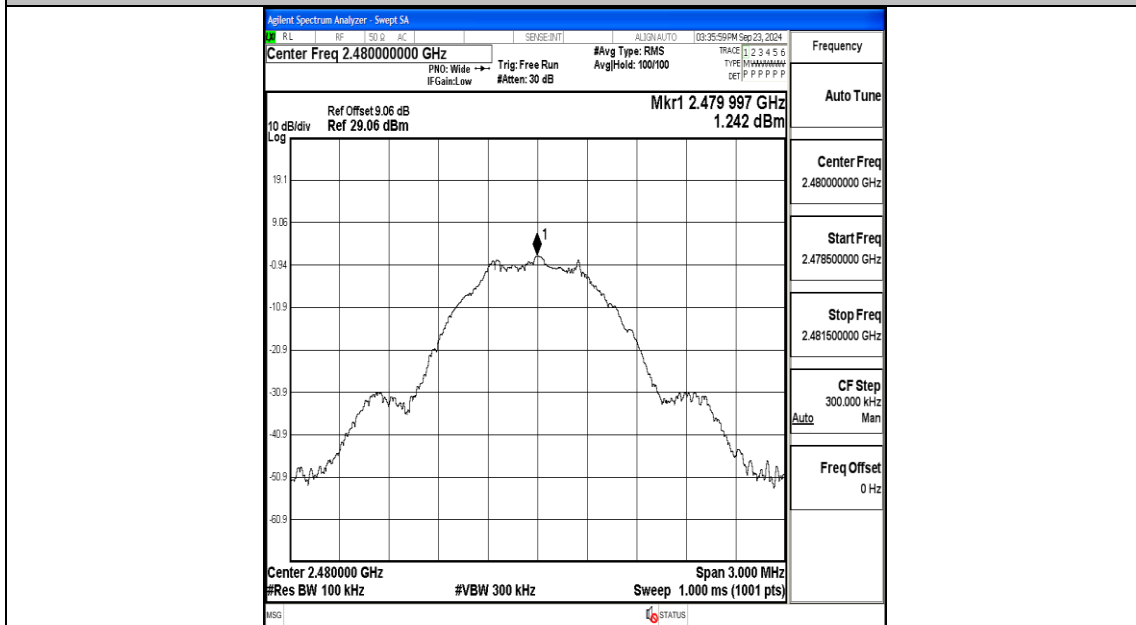
BLE_1M-Ant1-2440-0~Reference-PASS



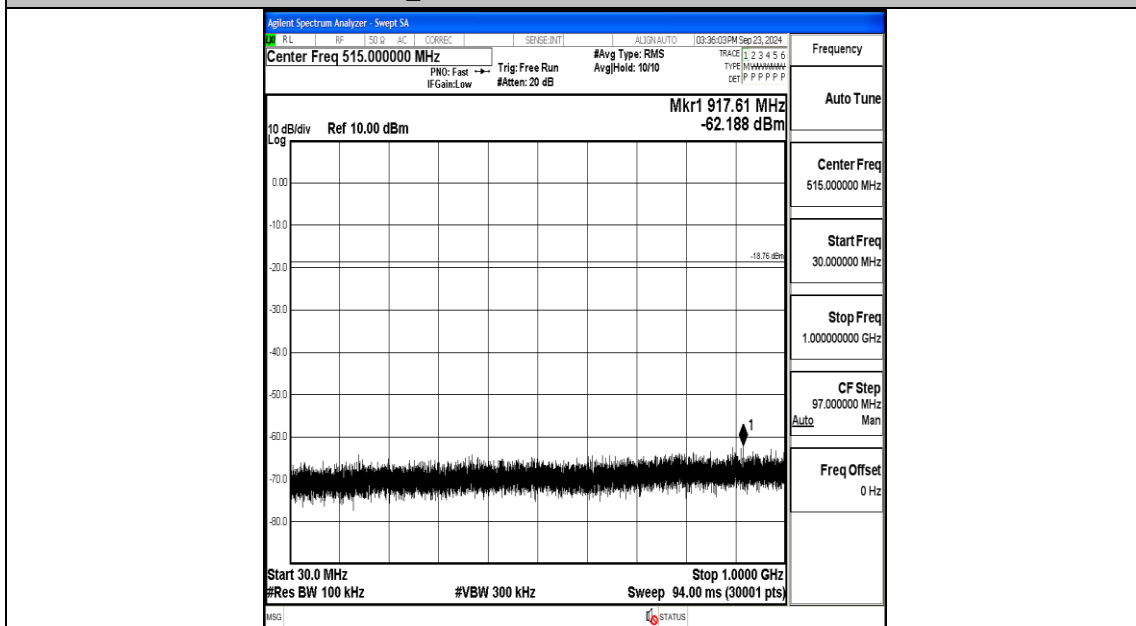
BLE_1M-Ant1-2440-30~1000-PASS



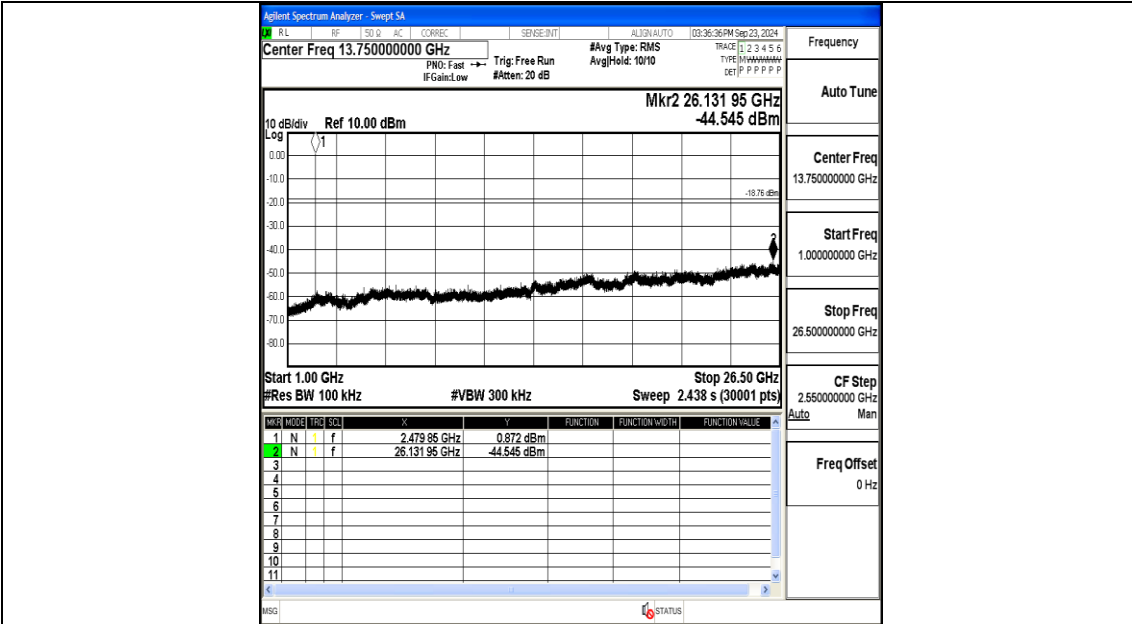
BLE_1M-Ant1-2440-1000~26500-PASS



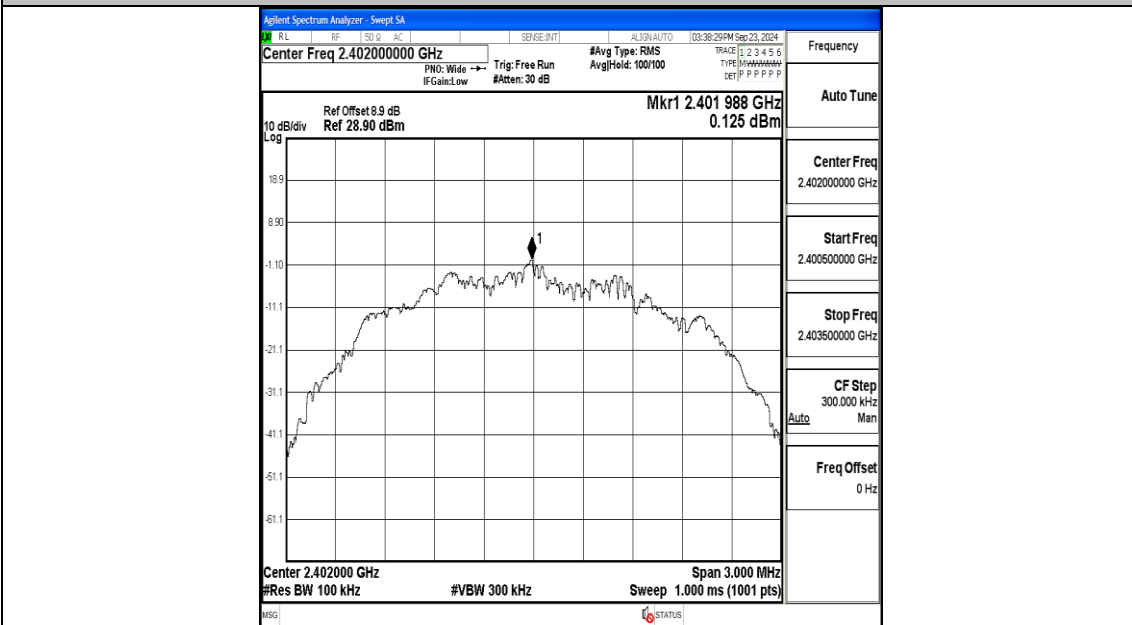
BLE_1M-Ant1-2480-0~Reference-PASS



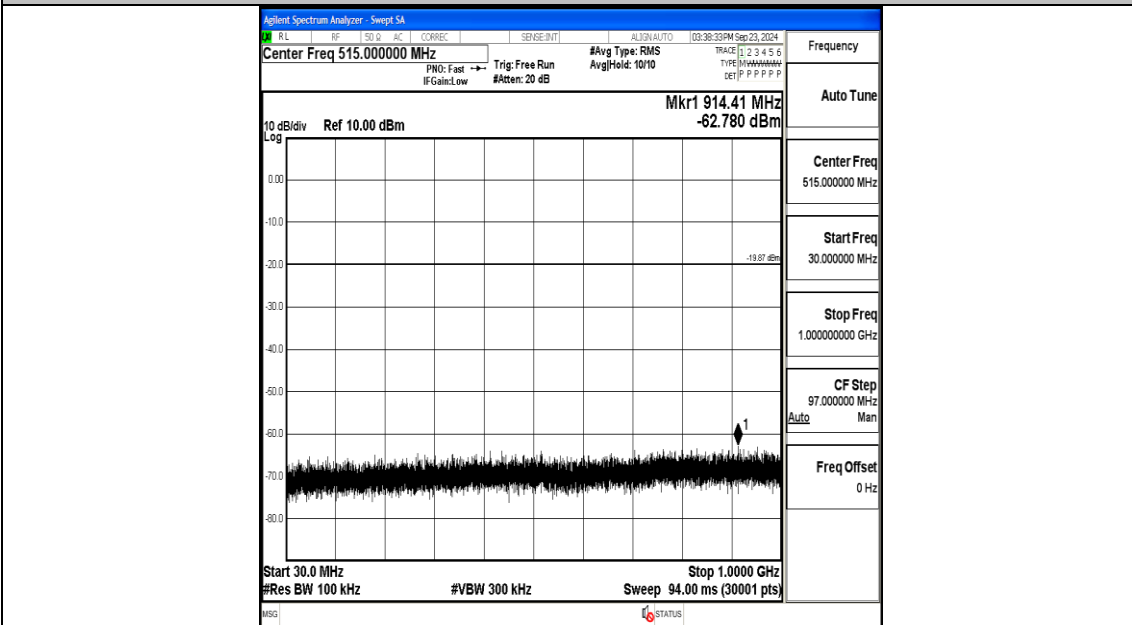
BLE_1M-Ant1-2480-30~1000-PASS



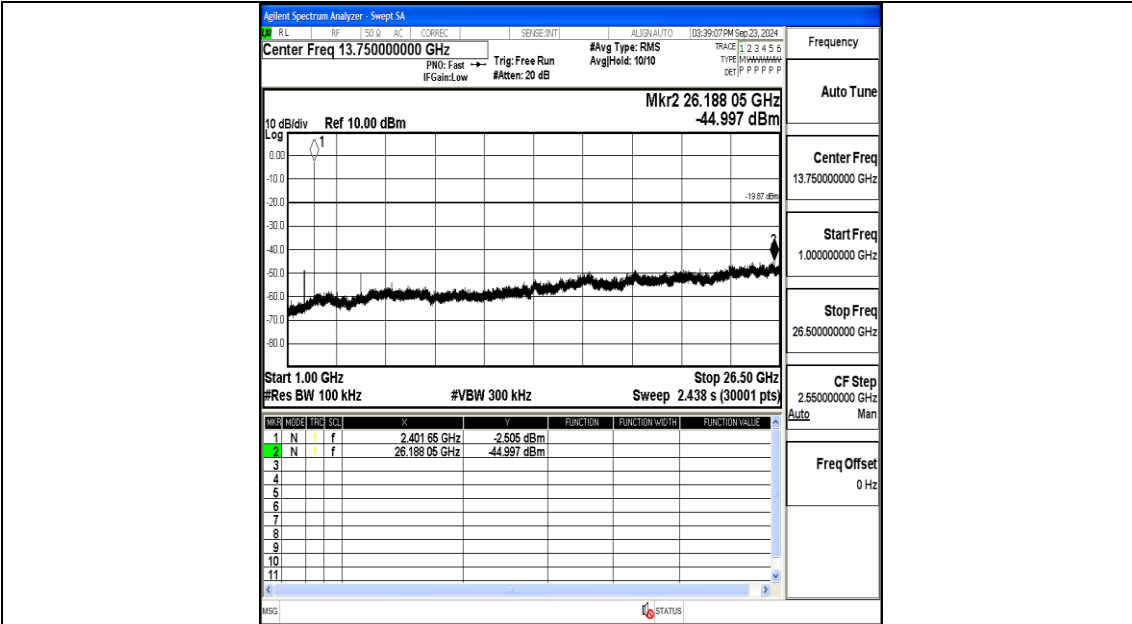
BLE_1M-Ant1-2480-1000~26500-PASS



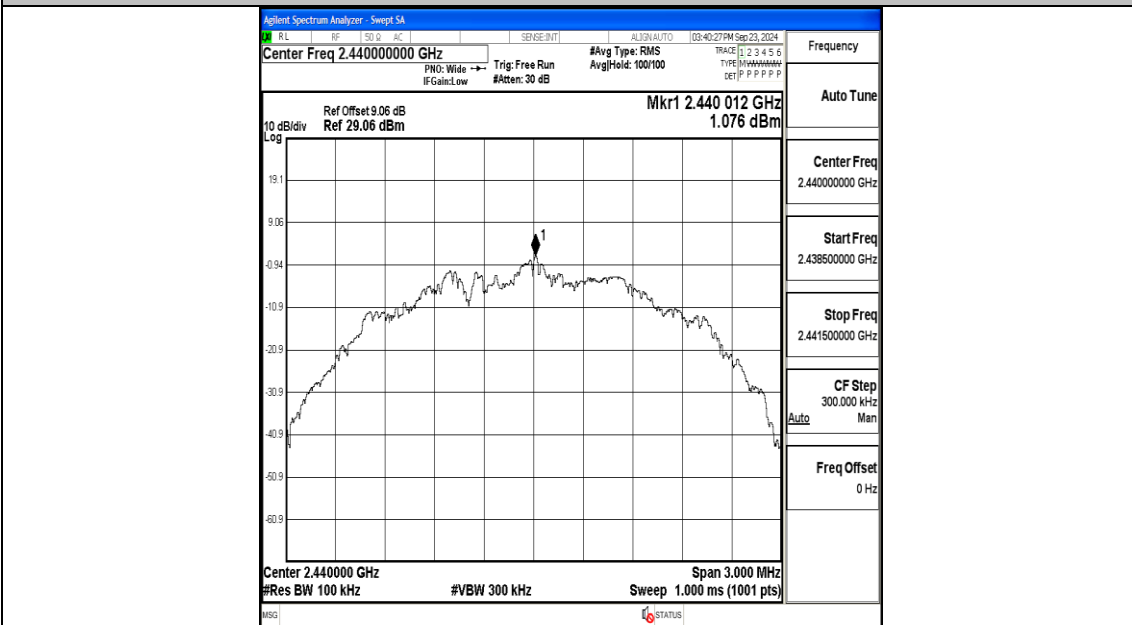
BLE_2M-Ant1-2402-0~Reference-PASS



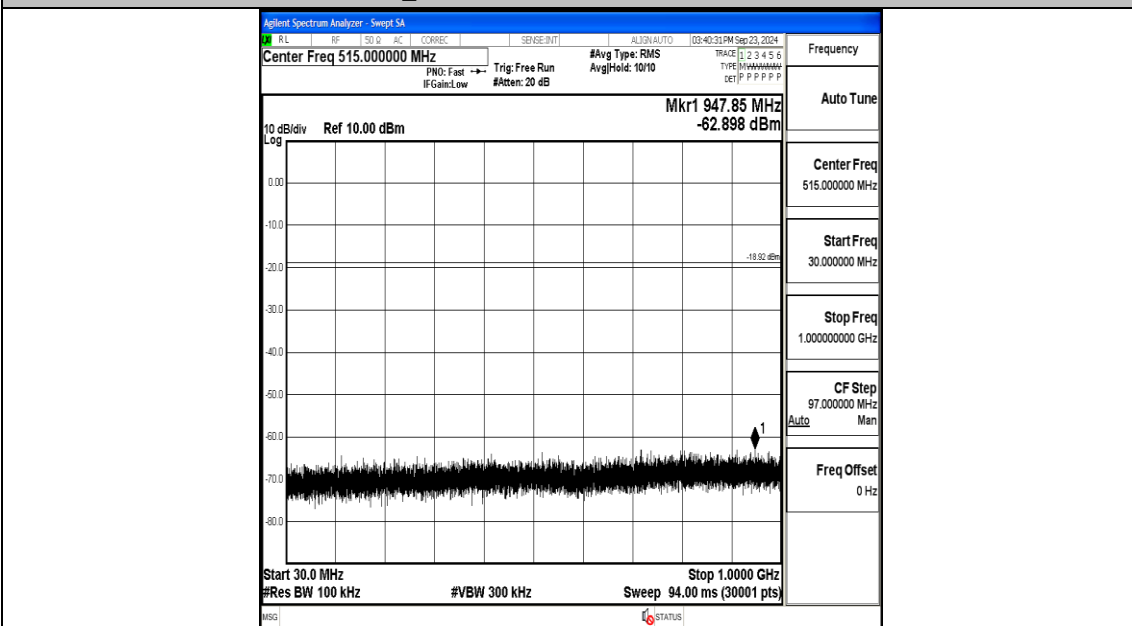
BLE_2M-Ant1-2402-30~1000-PASS



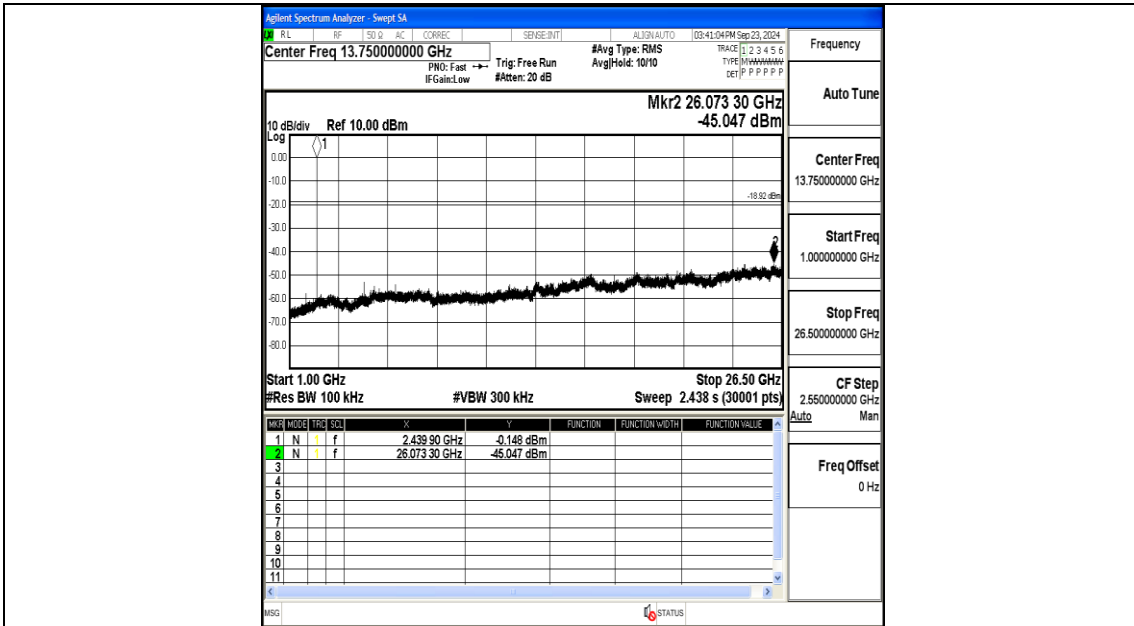
BLE_2M-Ant1-2402-1000~26500-PASS



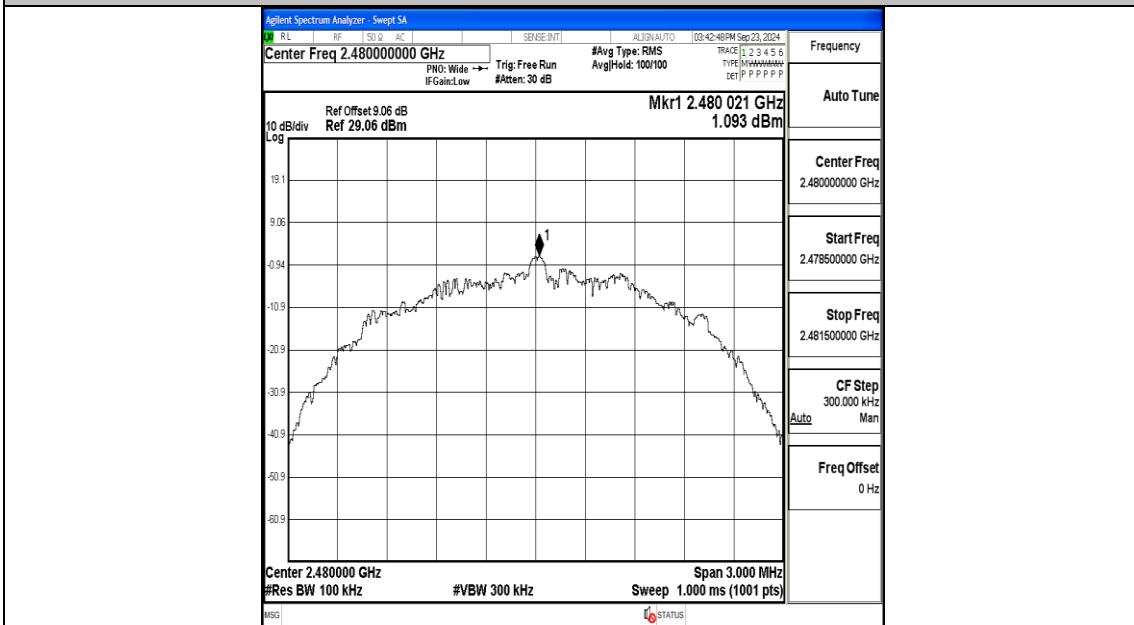
BLE_2M-Ant1-2440-0~Reference-PASS



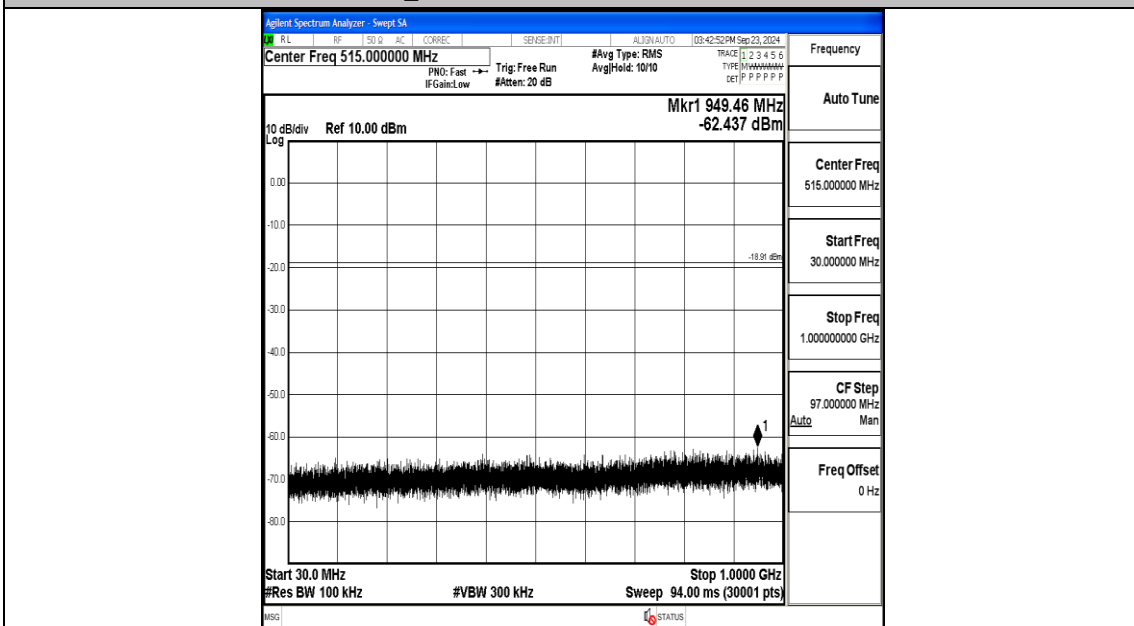
BLE_2M-Ant1-2440-30~1000-PASS



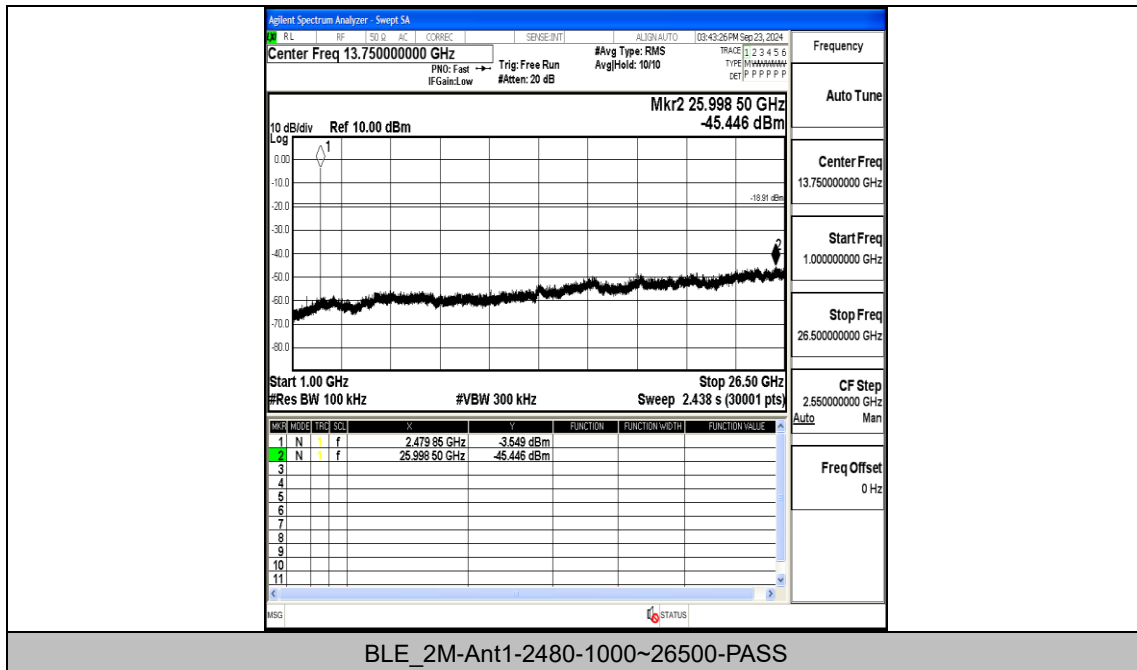
BLE_2M-Ant1-2440-1000~26500-PASS



BLE_2M-Ant1-2480-0~Reference-PASS



BLE_2M-Ant1-2480-30~1000-PASS

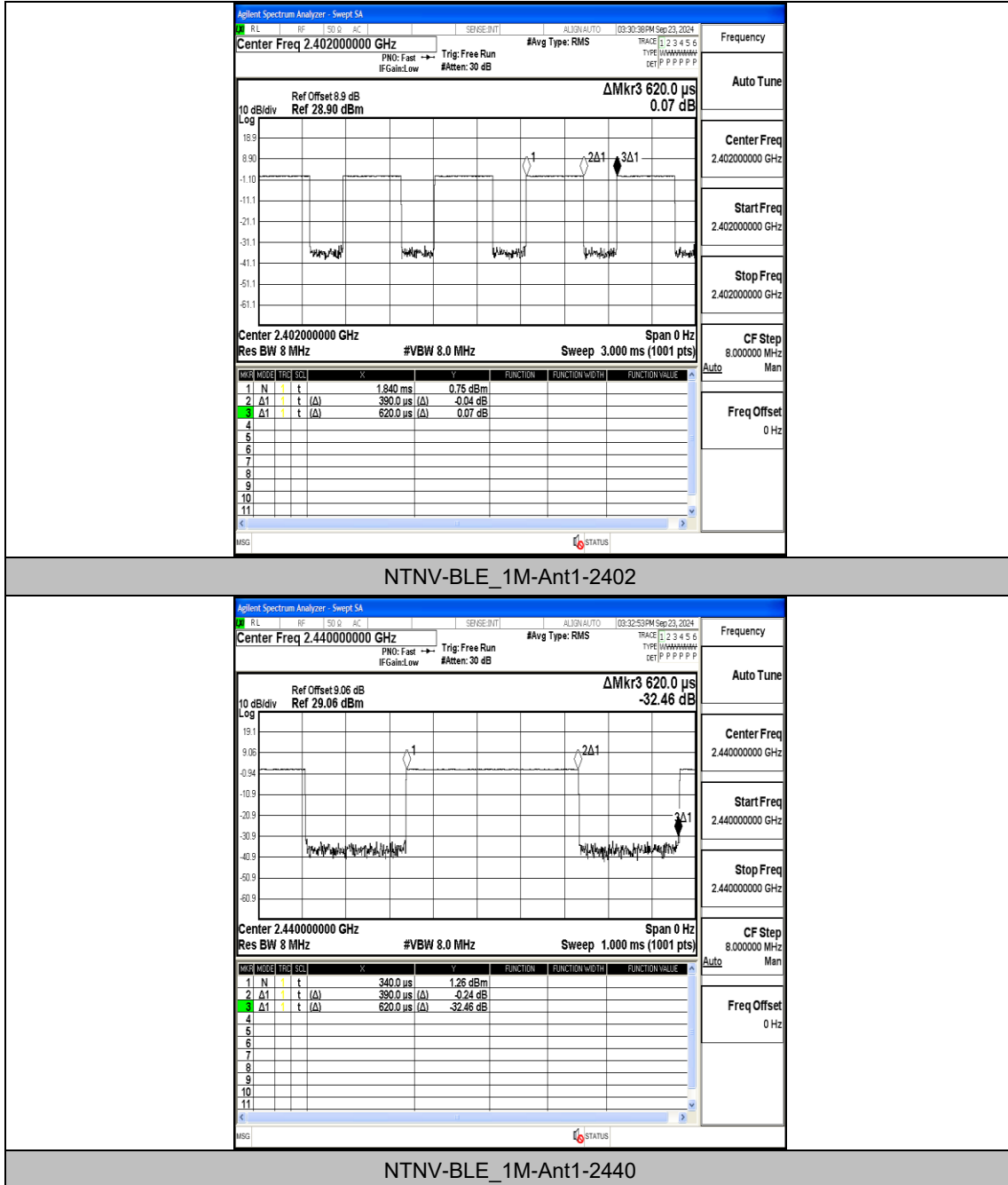


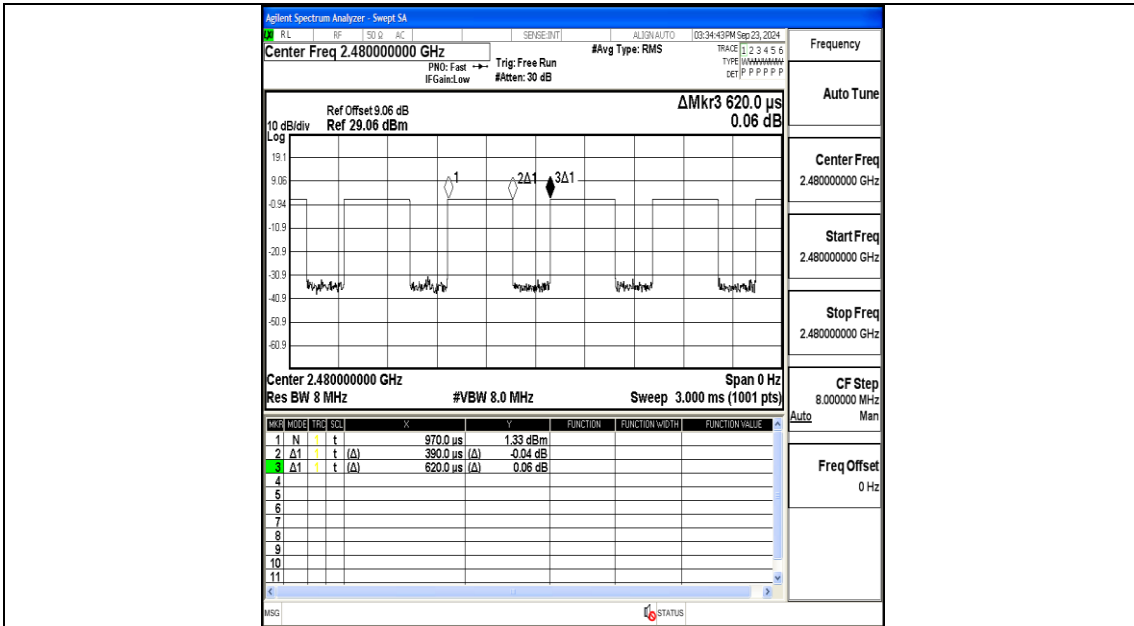
Appendix G: Duty Cycle

Test Result

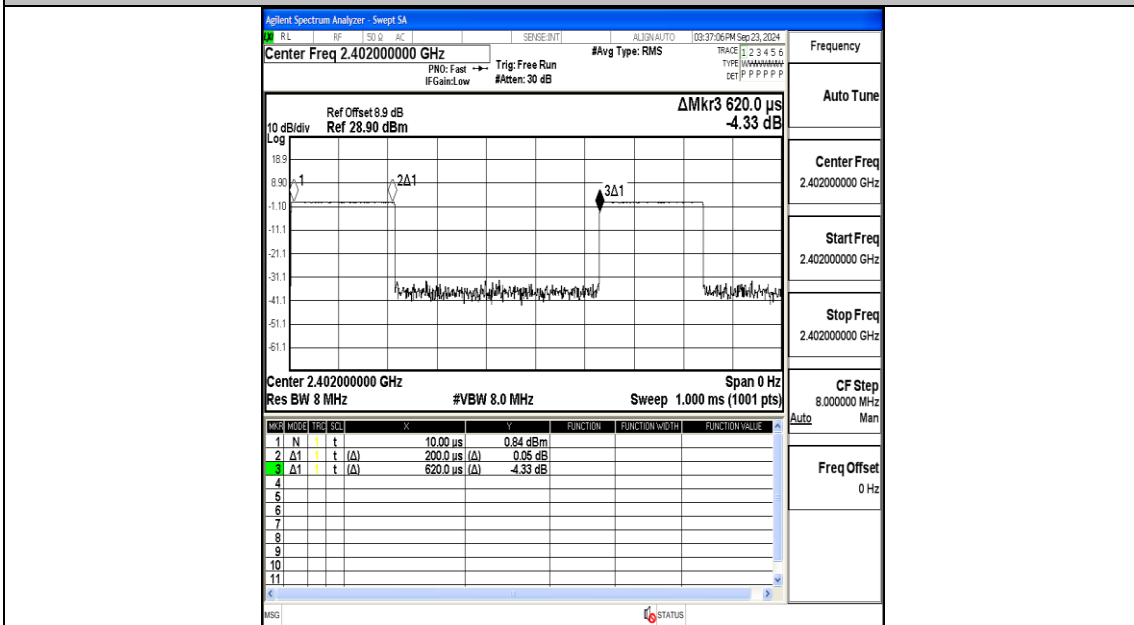
Test Mode	Antenna	Frequency [MHz]	ON Time [ms]	Period [ms]	Duty Cycle [%]	Duty Cycle Factor [dB]
BLE_1M	Ant1	2402	0.39	0.62	62.90	2.01
BLE_1M	Ant1	2440	0.39	0.62	62.90	2.01
BLE_1M	Ant1	2480	0.39	0.62	62.90	2.01
BLE_2M	Ant1	2402	0.20	0.62	32.26	4.91
BLE_2M	Ant1	2440	0.21	0.62	33.87	4.70
BLE_2M	Ant1	2480	0.21	0.63	33.33	4.77

Test Graphs

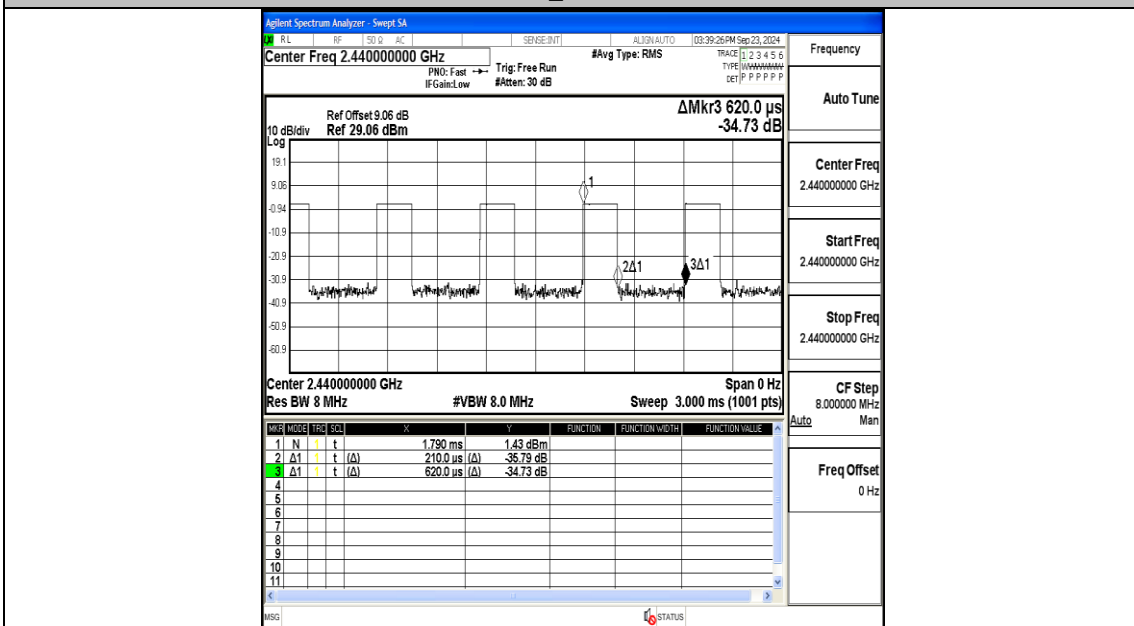




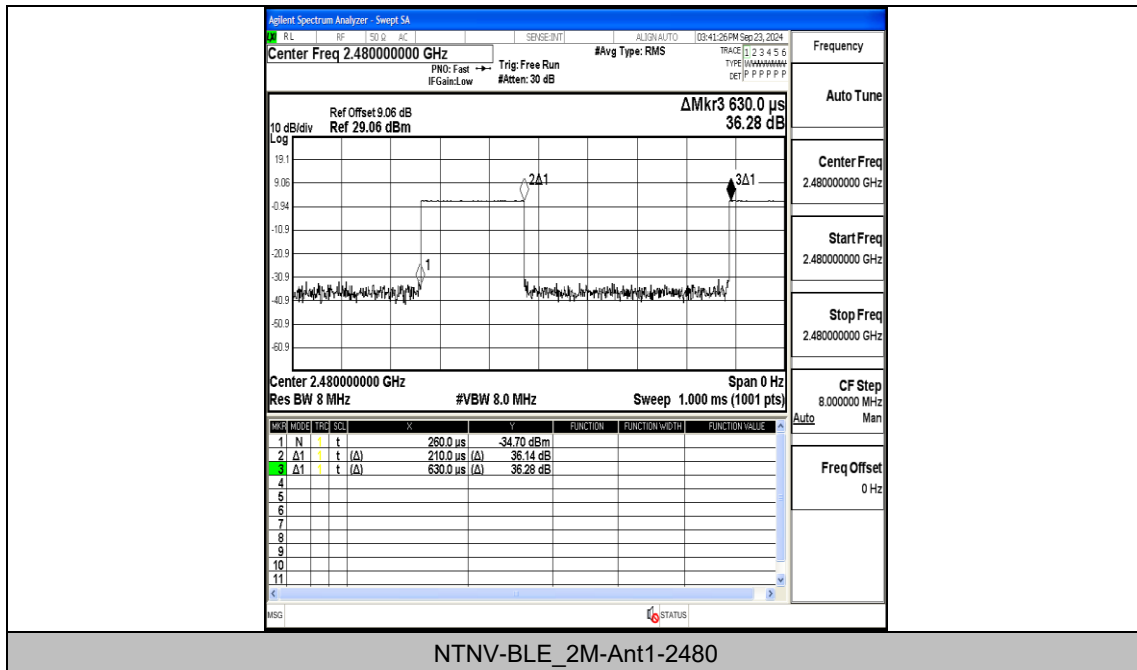
NTNV-BLE_1M-Ant1-2480



NTNV-BLE_2M-Ant1-2402



NTNV-BLE_2M-Ant1-2440



NTNV-BLE_2M-Ant1-2480