

Appendix Test Data for BLE (Conducted Measurement)

Product Name: Wifi Pineapple Pager

Trade Mark: /

Test Model: Mk1

FCC ID: 2A52Y-MK1

Environmental Conditions

Temperature:	23.5°C
Relative Humidity:	58%
ATM Pressure:	100.0 kPa
Test Engineer:	Allen Lai
Supervised by:	Max Zhang
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	0.696	2401.656	2402.352	0.5	PASS
BLE_1M	Ant1	2440	0.708	2439.648	2440.356	0.5	PASS
BLE_1M	Ant1	2480	0.648	2479.692	2480.340	0.5	PASS
BLE_2M	Ant1	2402	1.152	2401.444	2402.596	0.5	PASS
BLE_2M	Ant1	2440	1.256	2439.348	2440.604	0.5	PASS
BLE_2M	Ant1	2480	1.348	2479.332	2480.680	0.5	PASS

Note: offset(dB) = cable loss(dB) + attenuator factor(dB)

Test Graphs





BLE_1M-Ant1-2480-PASS



BLE_2M-Ant1-2402-PASS



Appendix B: Occupied Channel Bandwidth

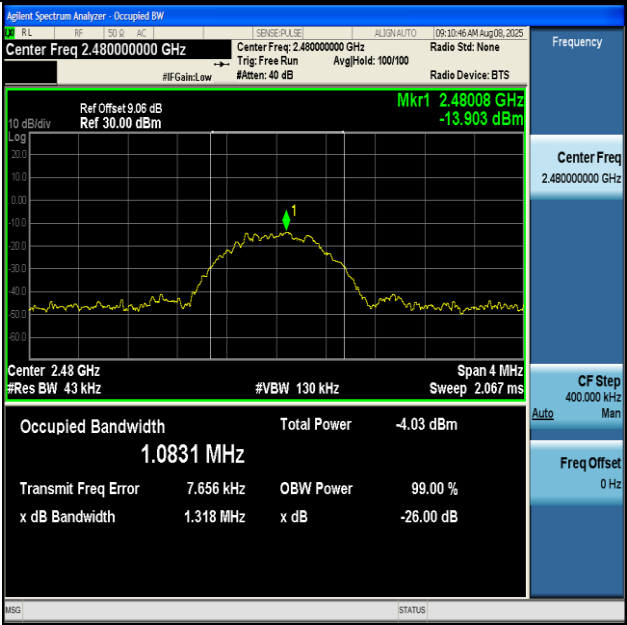
Test Result

Test Mode	Antenna	Frequency [MHz]	OCB [MHz]	FL [MHz]	FH [MHz]	Limit [MHz]	Verdict
BLE_1M	Ant1	2402	1.1015	2401.4569	2402.5584	---	---
BLE_1M	Ant1	2440	1.0684	2439.4768	2440.5452	---	---
BLE_1M	Ant1	2480	1.0831	2479.4661	2480.5492	---	---
BLE_2M	Ant1	2402	2.1487	2400.9370	2403.0857	---	---
BLE_2M	Ant1	2440	2.1164	2438.9626	2441.0790	---	---
BLE_2M	Ant1	2480	2.1228	2478.9603	2481.0831	---	---

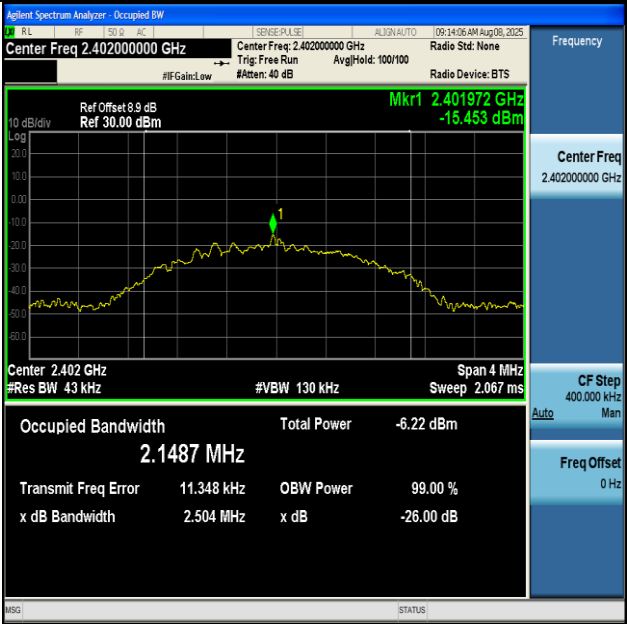
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)

Test Graphs

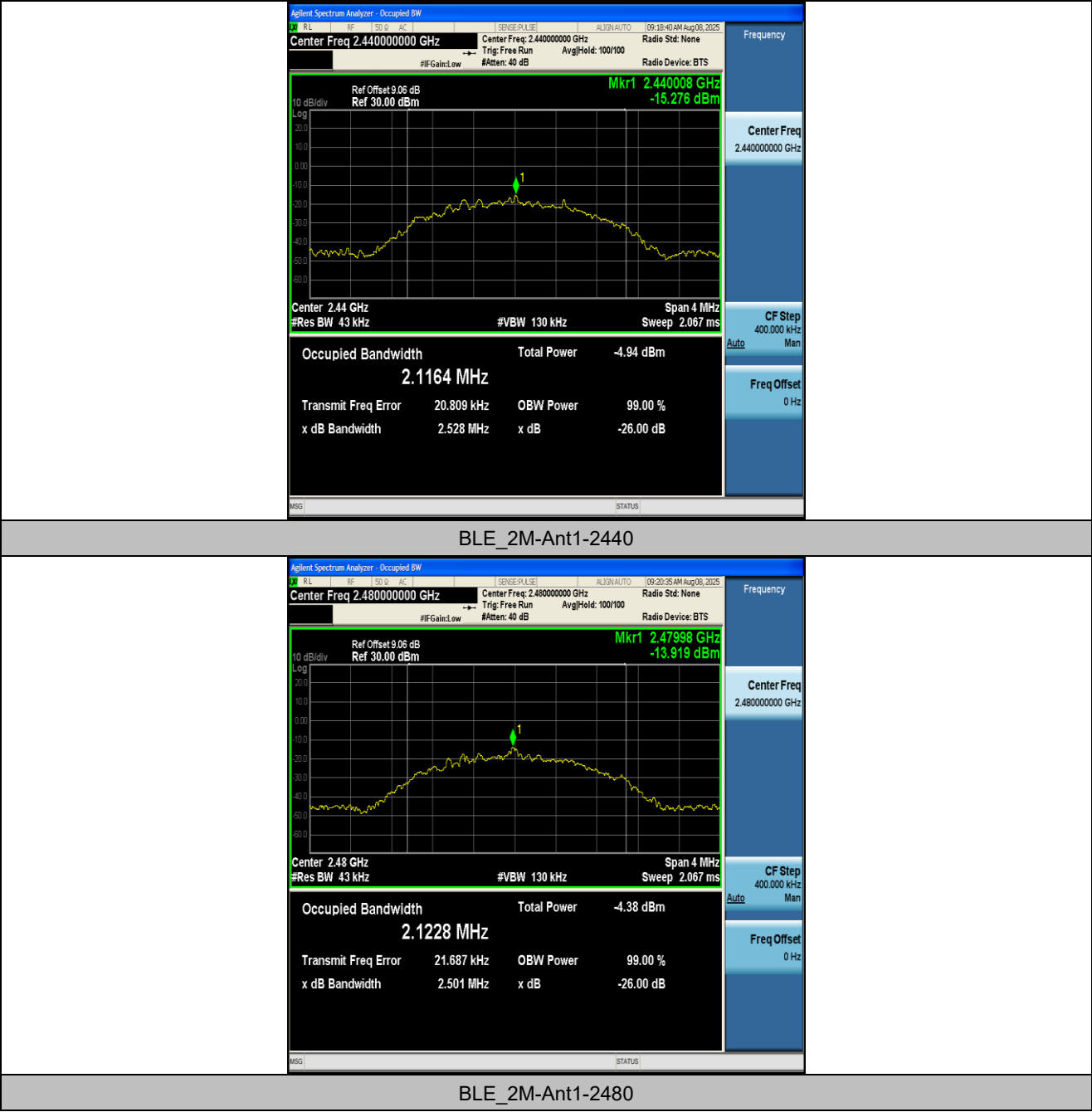




BLE_1M-Ant1-2480



BLE_2M-Ant1-2402



BLE_2M-Ant1-2480

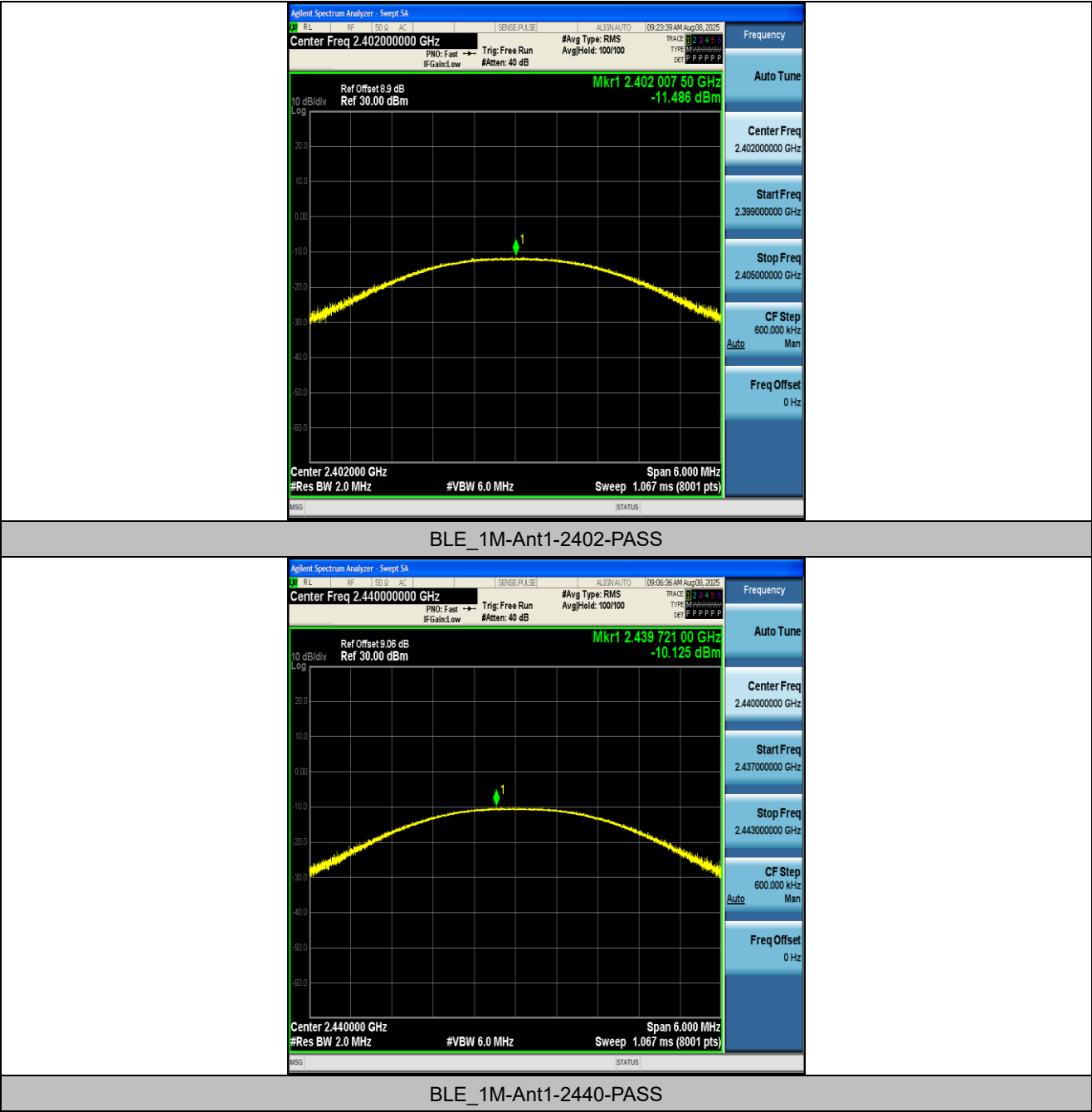
Appendix C: Maximum peak conducted output power

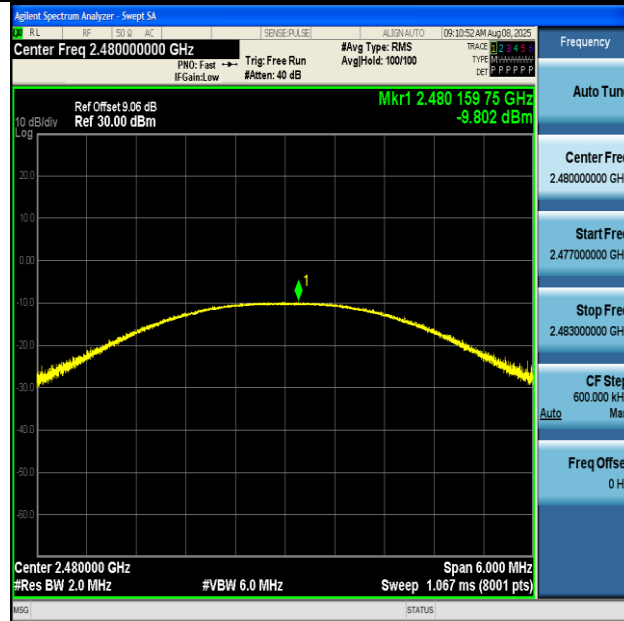
Test Result Peak

Test Mode	Antenna	Frequency [MHz]	Conducted Peak Power [dBm]	Conducted Limit [dBm]	Verdict
BLE_1M	Ant1	2402	-11.49	≤30	PASS
BLE_1M	Ant1	2440	-10.13	≤30	PASS
BLE_1M	Ant1	2480	-9.80	≤30	PASS
BLE_2M	Ant1	2402	-11.47	≤30	PASS
BLE_2M	Ant1	2440	-10.42	≤30	PASS
BLE_2M	Ant1	2480	-9.76	≤30	PASS

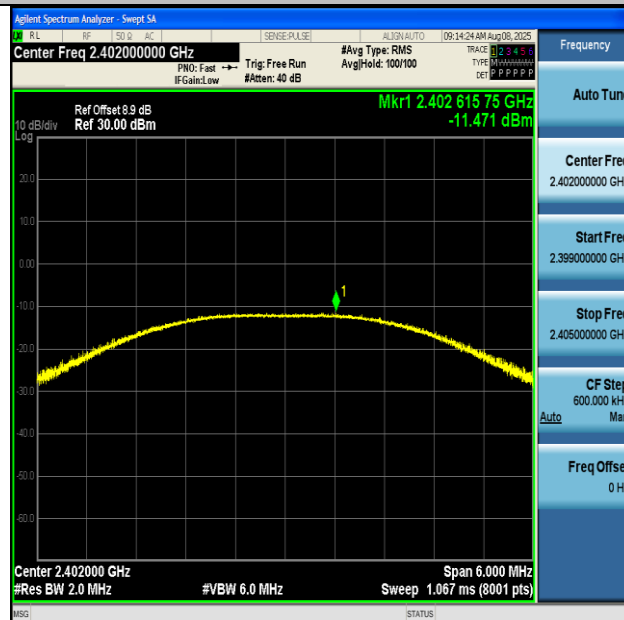
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)

Test Graphs Peak

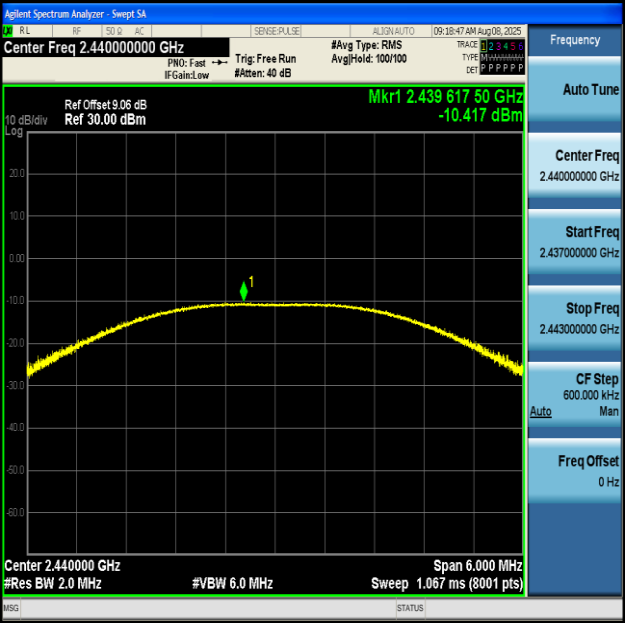




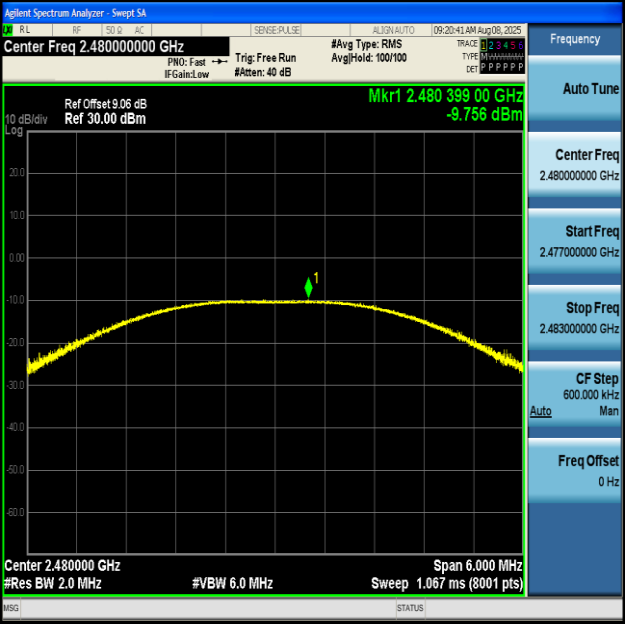
BLE_1M-Ant1-2480-PASS



BLE_2M-Ant1-2402-PASS



BLE_2M-Ant1-2440-PASS



BLE_2M-Ant1-2480-PASS

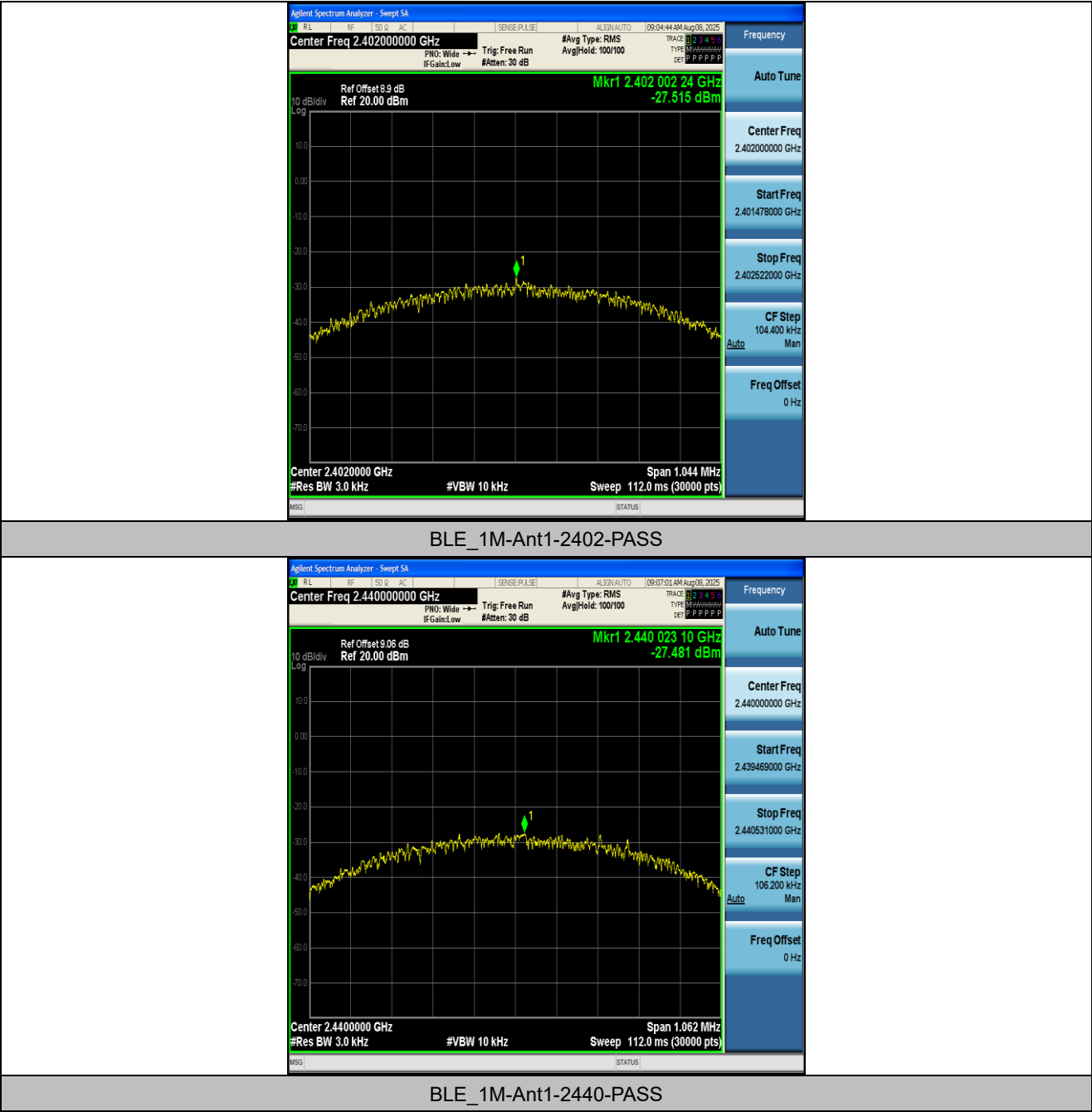
Appendix D: Maximum peak power spectral density

Test Result

Test Mode	Antenna	Frequency [MHz]	Result [dBm/3kHz]	Limit [dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-27.52	≤8.00	PASS
BLE_1M	Ant1	2440	-27.48	≤8.00	PASS
BLE_1M	Ant1	2480	-27.21	≤8.00	PASS
BLE_2M	Ant1	2402	-29.60	≤8.00	PASS
BLE_2M	Ant1	2440	-28.95	≤8.00	PASS
BLE_2M	Ant1	2480	-28.71	≤8.00	PASS

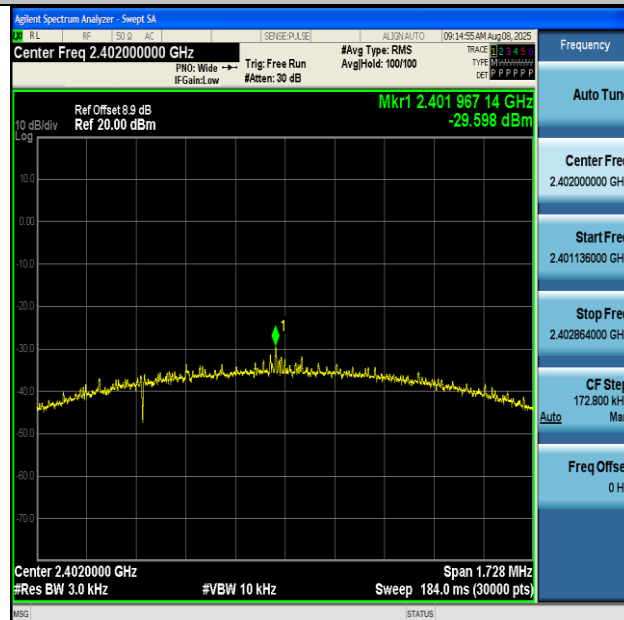
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)

Test Graphs

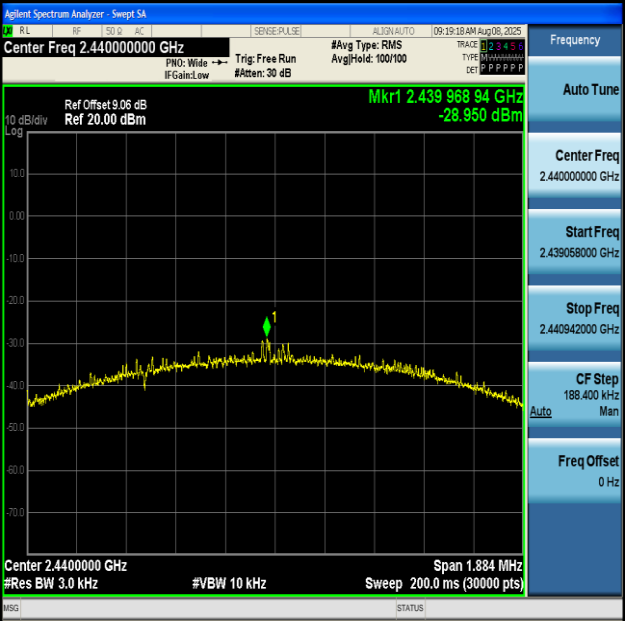




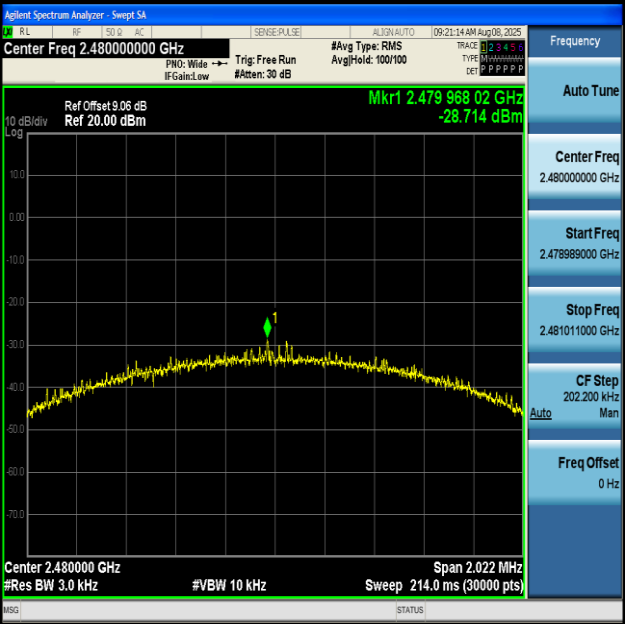
BLE_1M-Ant1-2480-PASS



BLE_2M-Ant1-2402-PASS



BLE_2M-Ant1-2440-PASS



BLE_2M-Ant1-2480-PASS

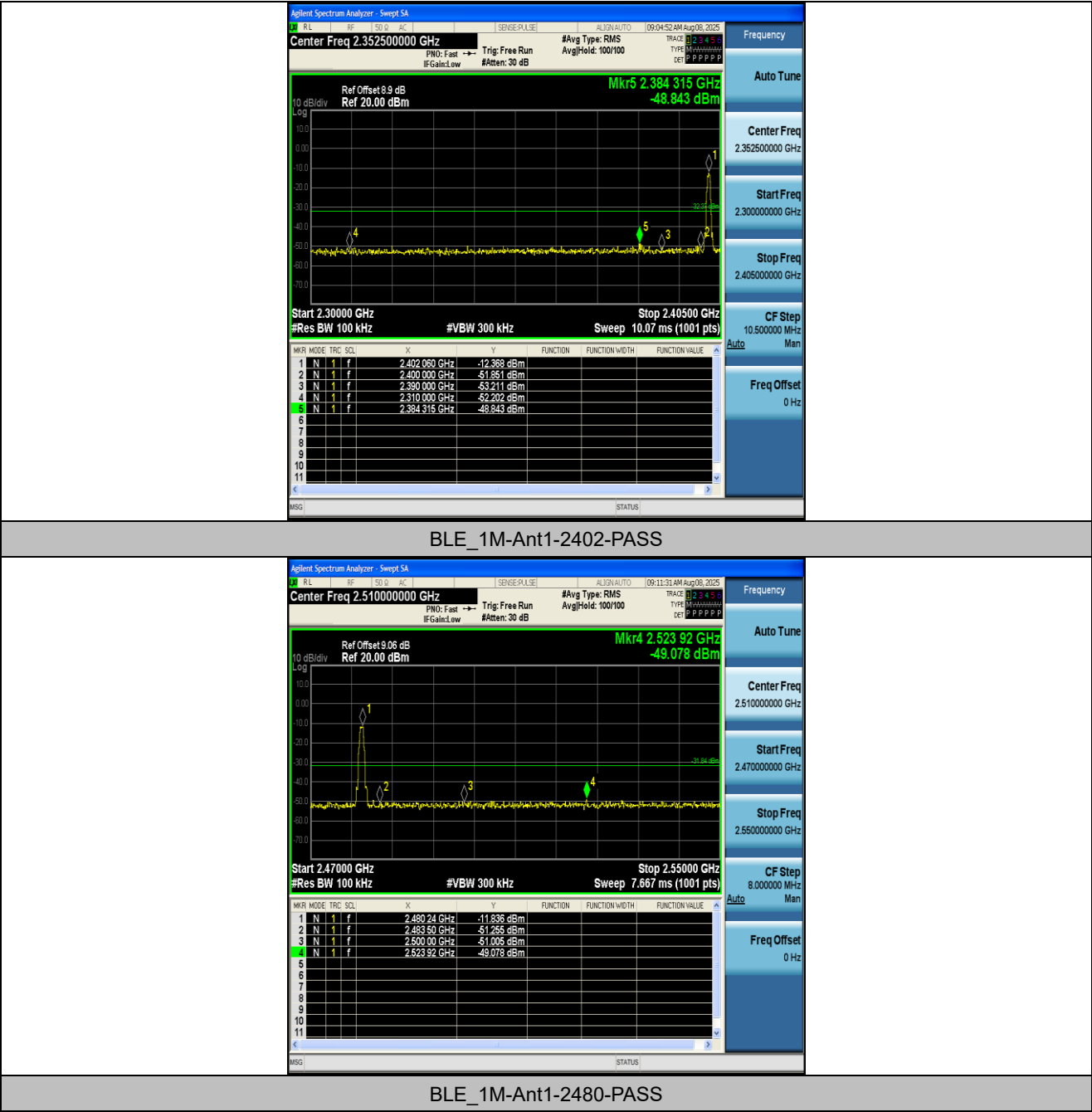
Appendix E: Band edge measurements

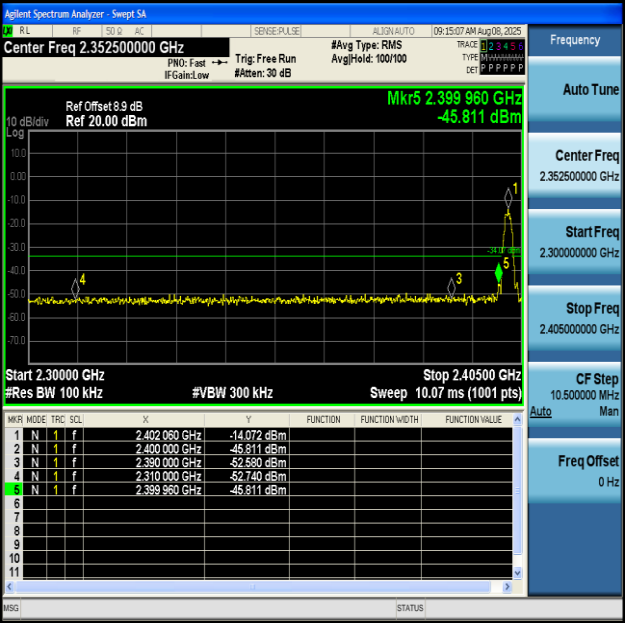
Test Result

Test Mode	Antenna	Ch. Name	Frequency [MHz]	Ref. Level [dBm]	Result [dBm]	Limit [dBm]	Verdict
BLE_1M	Ant1	Low	2402	-12.37	-48.84	≤ -32.37	PASS
BLE_1M	Ant1	High	2480	-11.84	-49.08	≤ -31.84	PASS
BLE_2M	Ant1	Low	2402	-14.07	-45.81	≤ -34.07	PASS
BLE_2M	Ant1	High	2480	-13.08	-49.32	≤ -33.08	PASS

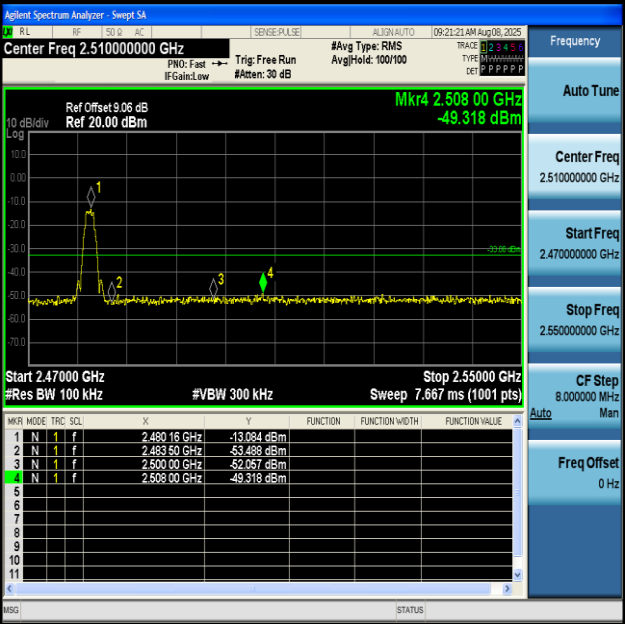
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)

Test Graphs





BLE_2M-Ant1-2402-PASS



BLE_2M-Ant1-2480-PASS

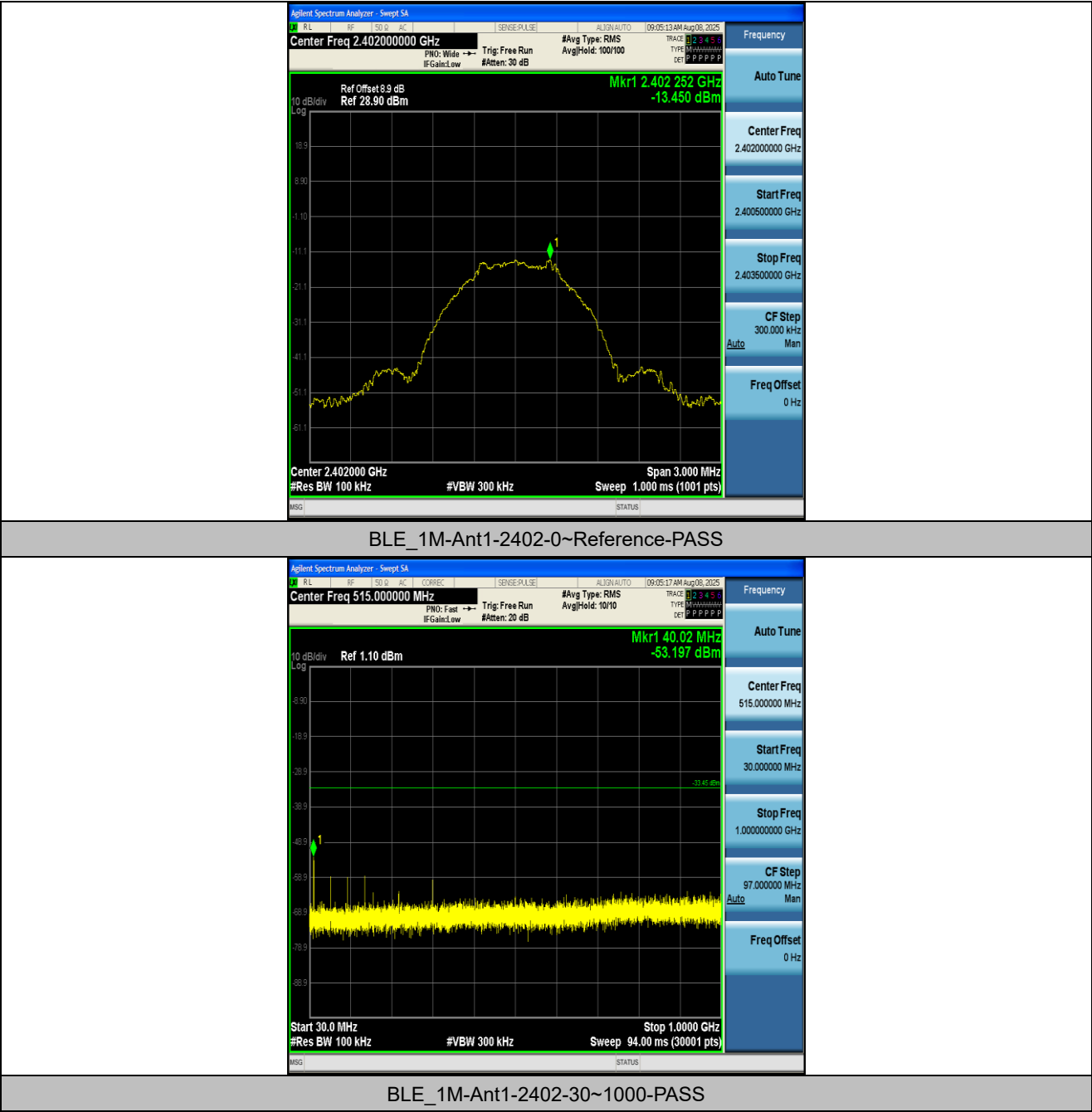
Appendix F: Conducted Spurious Emission

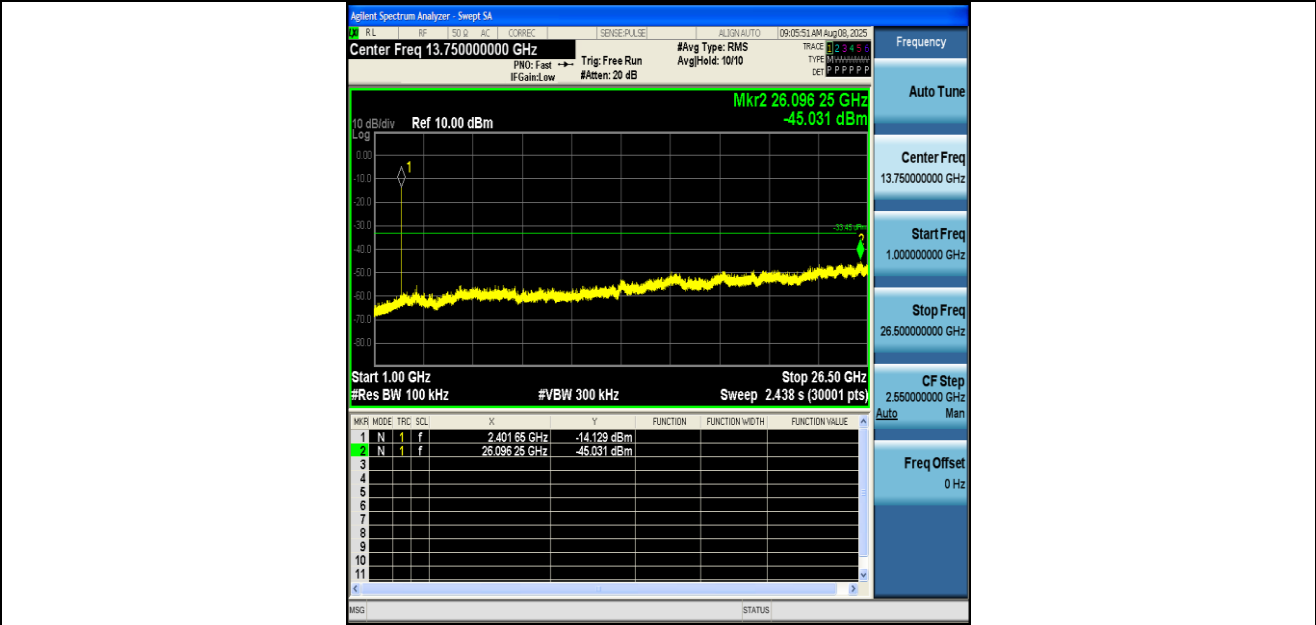
Test Result

Test Mode	Antenna	Frequency [MHz]	Freq. Range [MHz]	Ref. Level [dBm]	Result [dBm]	Limit [dBm]	Verdict
BLE_1M	Ant1	2402	0~Reference	-13.45	-13.45	---	PASS
BLE_1M	Ant1	2402	30~1000	-13.45	-53.2	≤ -33.45	PASS
BLE_1M	Ant1	2402	1000~26500	-13.45	-45.03	≤ -33.45	PASS
BLE_1M	Ant1	2440	0~Reference	-11.24	-11.24	---	PASS
BLE_1M	Ant1	2440	30~1000	-11.24	-53.08	≤ -31.24	PASS
BLE_1M	Ant1	2440	1000~26500	-11.24	-45.17	≤ -31.24	PASS
BLE_1M	Ant1	2480	0~Reference	-11.57	-11.57	---	PASS
BLE_1M	Ant1	2480	30~1000	-11.57	-53.21	≤ -31.57	PASS
BLE_1M	Ant1	2480	1000~26500	-11.57	-45.41	≤ -31.57	PASS
BLE_2M	Ant1	2402	0~Reference	-15.84	-15.84	---	PASS
BLE_2M	Ant1	2402	30~1000	-15.84	-52.66	≤ -35.84	PASS
BLE_2M	Ant1	2402	1000~26500	-15.84	-44.92	≤ -35.84	PASS
BLE_2M	Ant1	2440	0~Reference	-11.86	-11.86	---	PASS
BLE_2M	Ant1	2440	30~1000	-11.86	-52.6	≤ -31.86	PASS
BLE_2M	Ant1	2440	1000~26500	-11.86	-45.39	≤ -31.86	PASS
BLE_2M	Ant1	2480	0~Reference	-10.87	-10.87	---	PASS
BLE_2M	Ant1	2480	30~1000	-10.87	-51.01	≤ -30.87	PASS
BLE_2M	Ant1	2480	1000~26500	-10.87	-45.56	≤ -30.87	PASS

Note: offset(dB) in Reference test plots = cable loss(dB) + attenuator factor(dB); For spurious emissions plots from 30MHz to 26.5GHz, the cable loss and attenuator factors have been set in the 'Input Correction' of the Spectrum Analyzer during the test.

Test Graphs

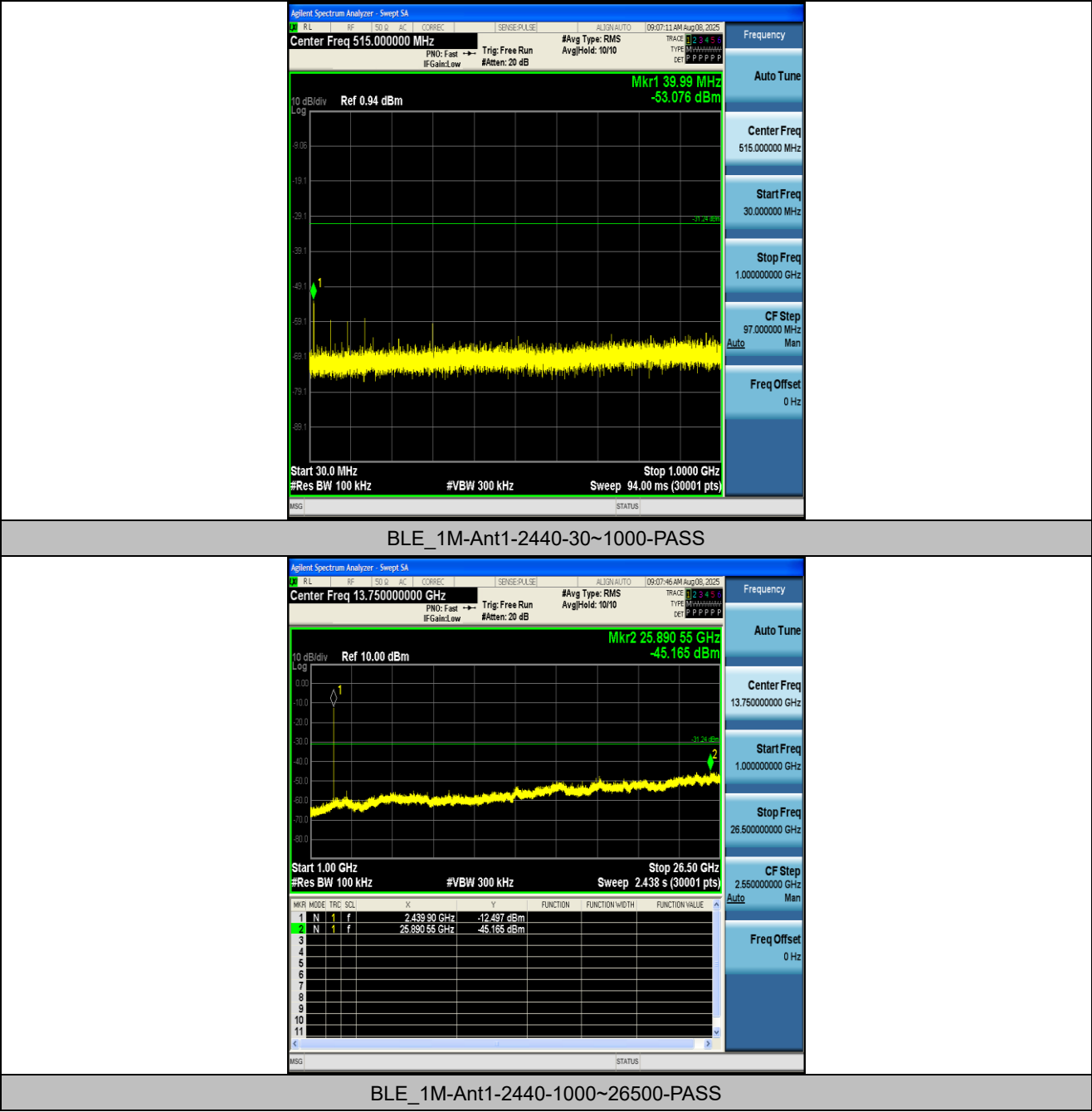




BLE_1M-Ant1-2402-1000~26500-PASS

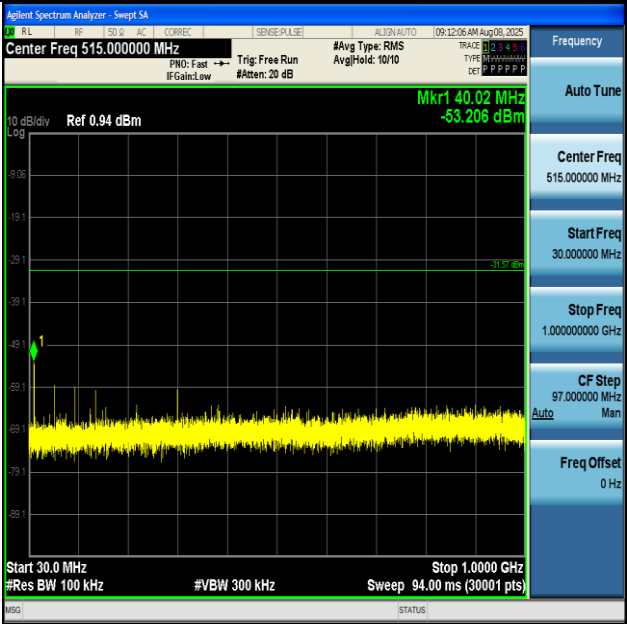


BLE_1M-Ant1-2440-0~Reference-PASS



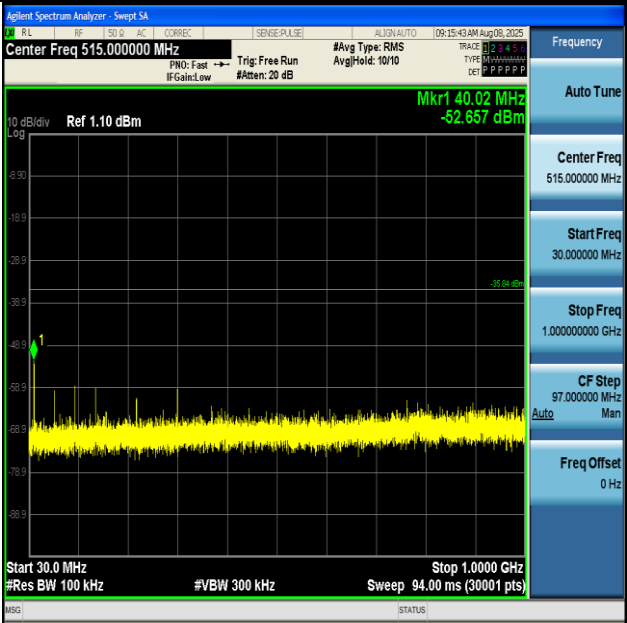


BLE_1M-Ant1-2480-0~Reference-PASS

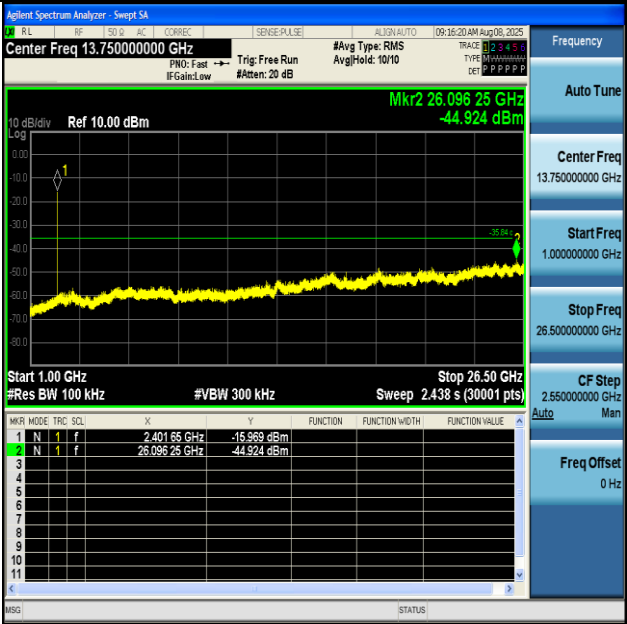


BLE_1M-Ant1-2480-30~1000-PASS

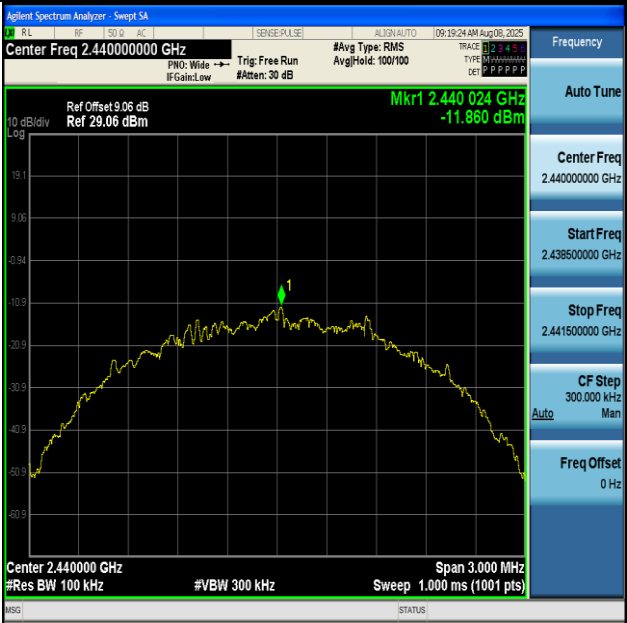




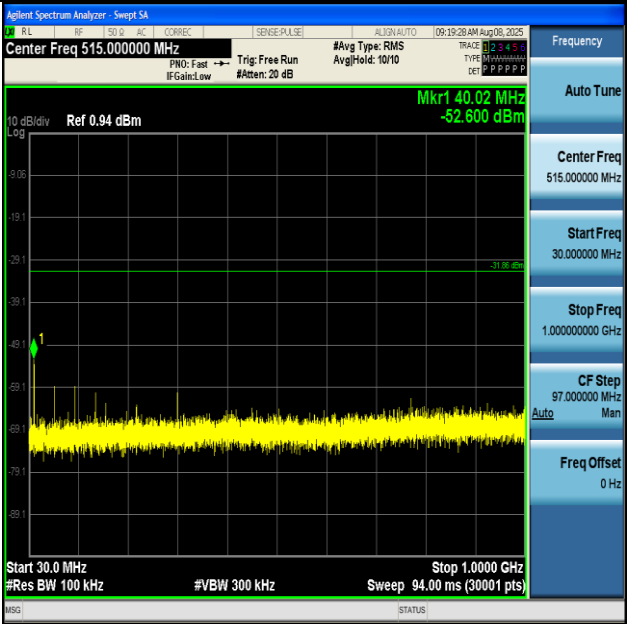
BLE_2M-Ant1-2402-30~1000-PASS



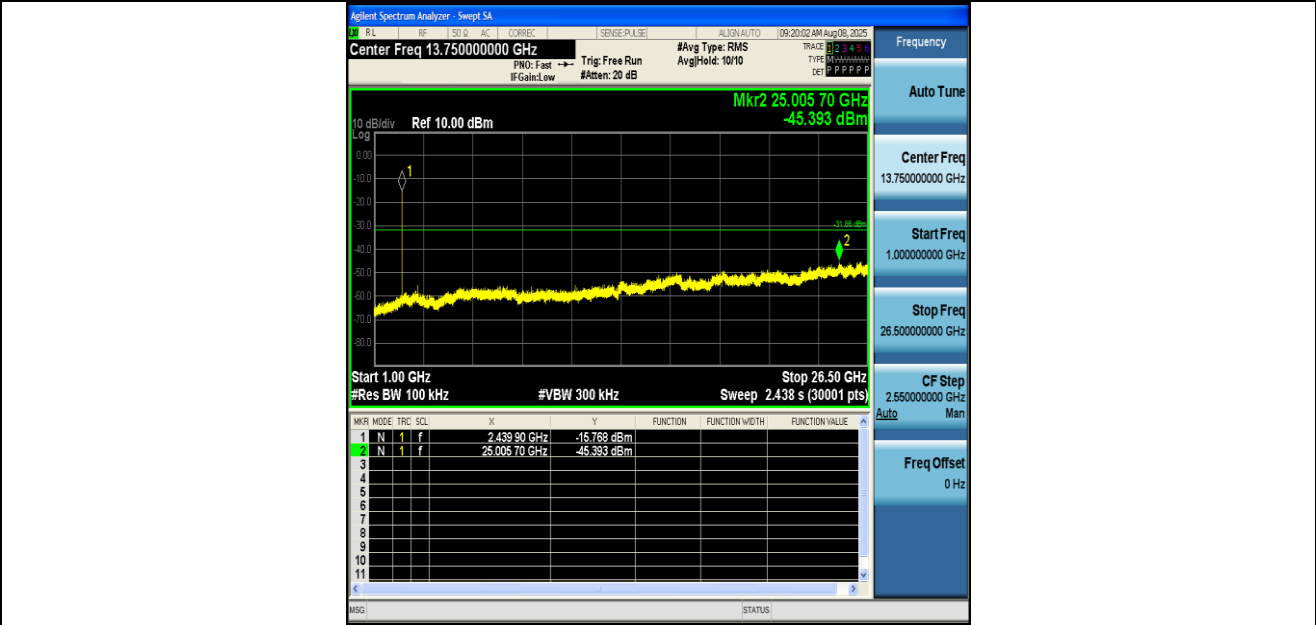
BLE_2M-Ant1-2402-1000~26500-PASS



BLE_2M-Ant1-2440-0~Reference-PASS



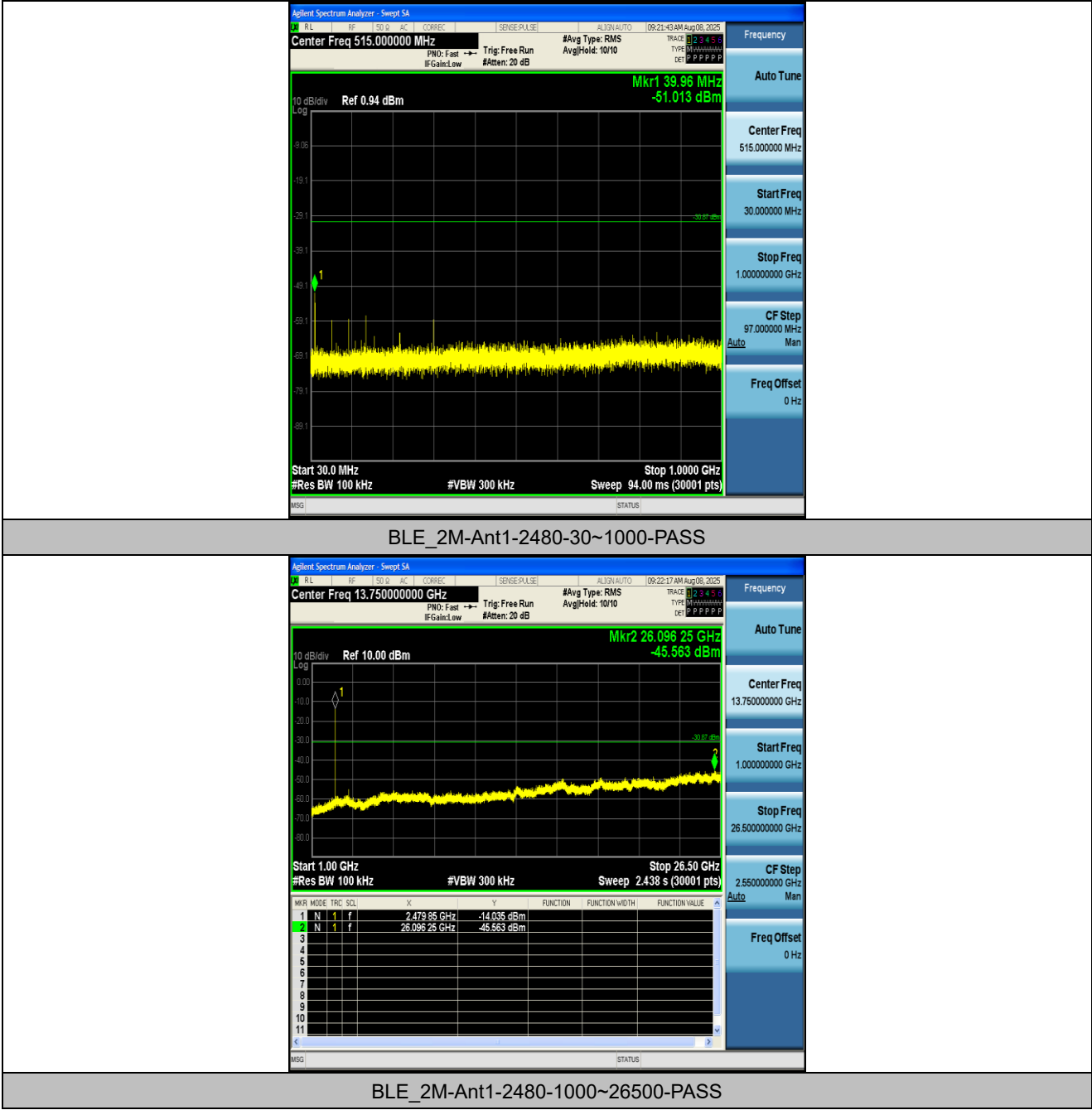
BLE_2M-Ant1-2440-30~1000-PASS



BLE_2M-Ant1-2440-1000~26500-PASS



BLE_2M-Ant1-2480-0~Reference-PASS



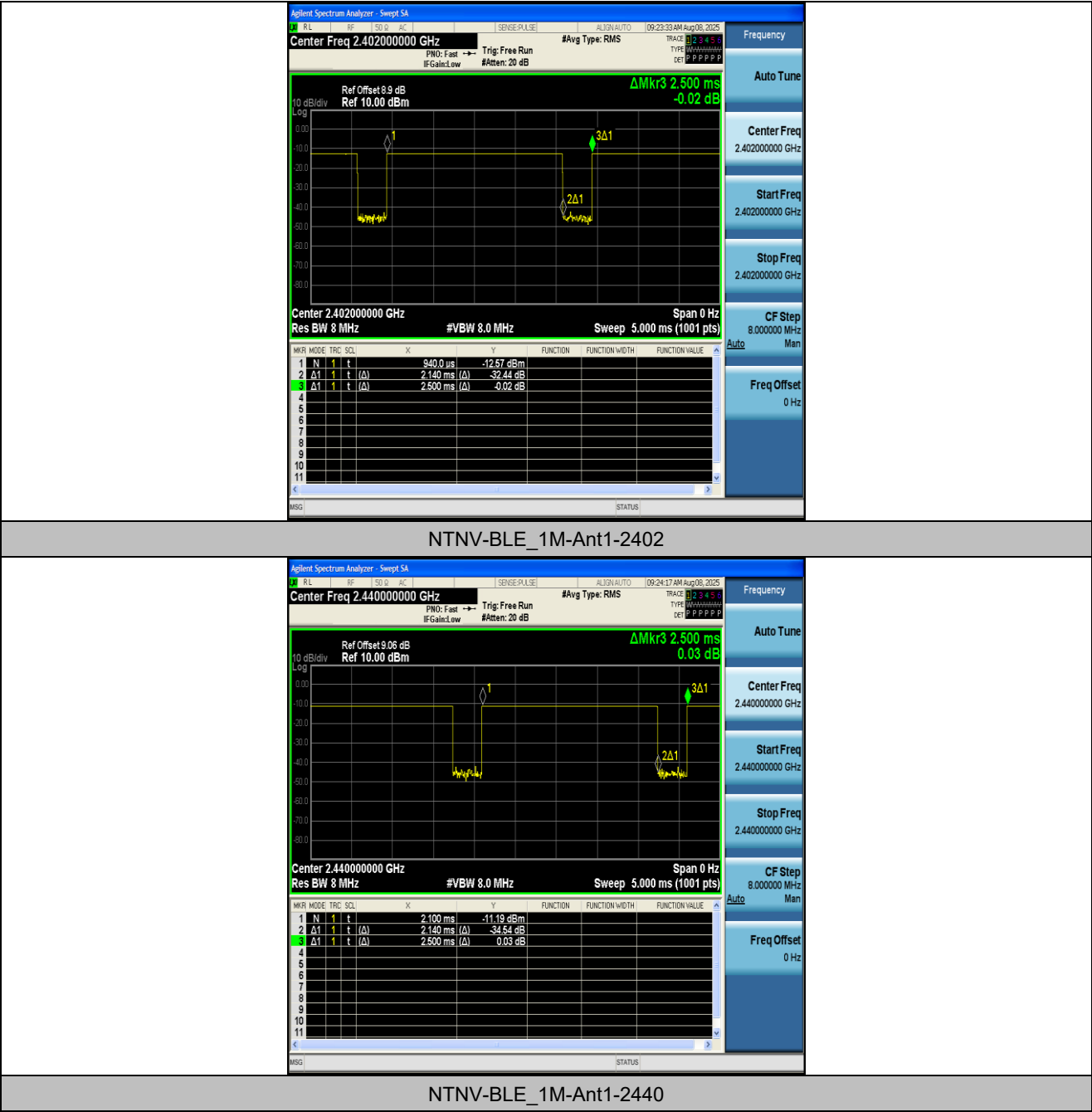
Appendix G: Duty Cycle

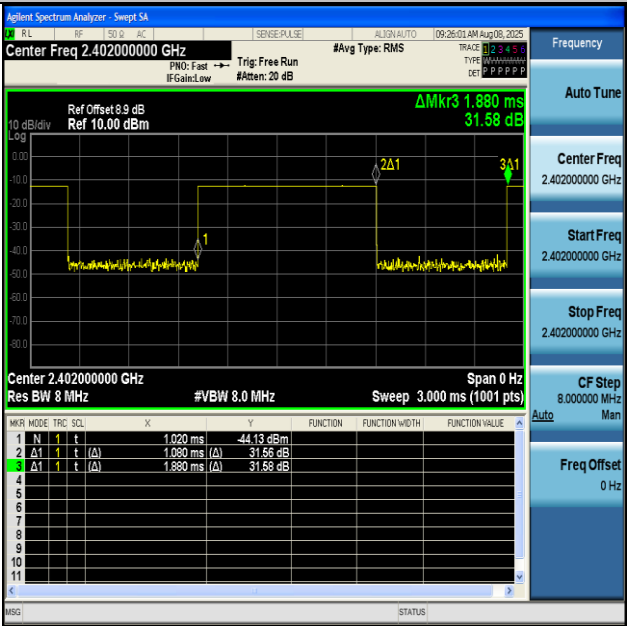
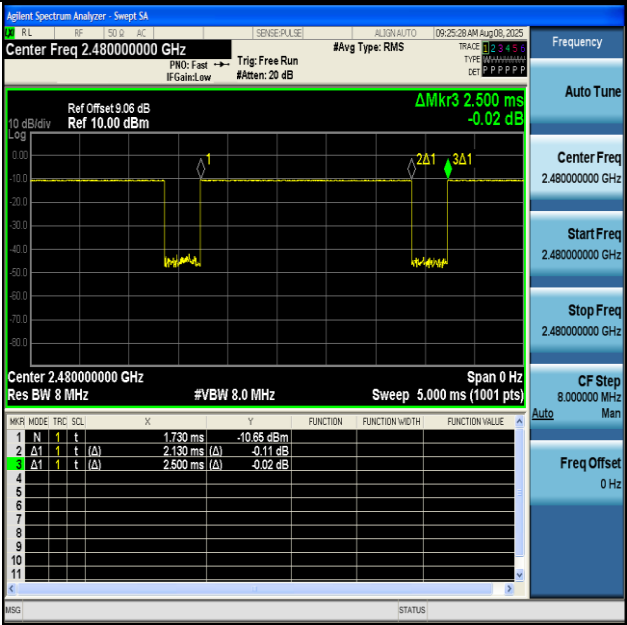
Test Result

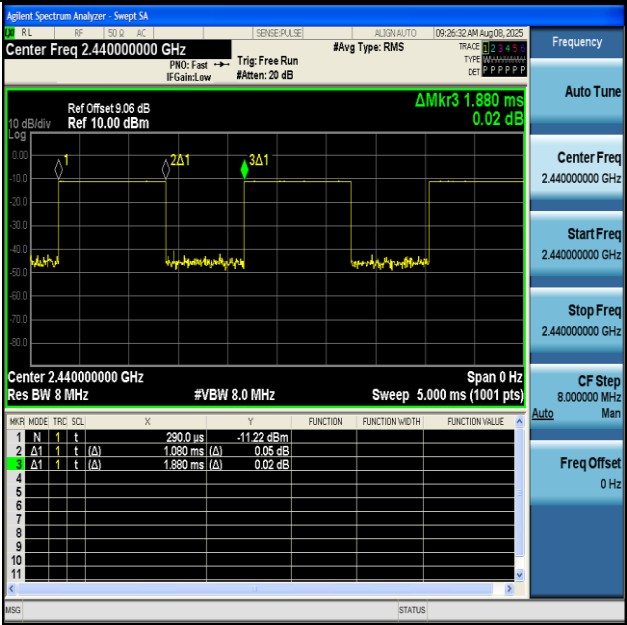
Test Mode	Antenna	Frequency [MHz]	ON Time [ms]	Period [ms]	Duty Cycle [%]	Duty Cycle Factor [dB]
BLE_1M	Ant1	2402	2.14	2.50	85.60	0.68
BLE_1M	Ant1	2440	2.14	2.50	85.60	0.68
BLE_1M	Ant1	2480	2.13	2.50	85.20	0.70
BLE_2M	Ant1	2402	1.08	1.88	57.45	2.41
BLE_2M	Ant1	2440	1.08	1.88	57.45	2.41
BLE_2M	Ant1	2480	1.09	1.88	57.98	2.37

Note: offset(dB) = cable loss(dB) + attenuator factor(dB)

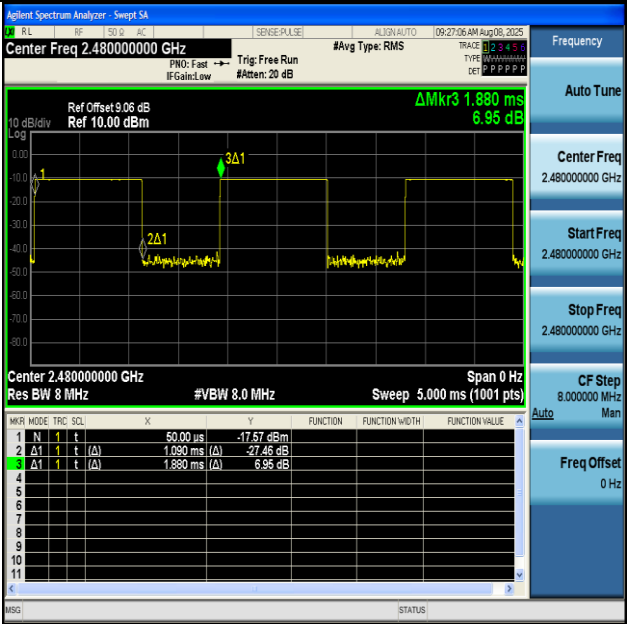
Test Graphs







NTNV-BLE_2M-Ant1-2440



NTNV-BLE_2M-Ant1-2480