

Appendix Test Data for BLE (Conducted Measurement)

Product Name: Boomcore Tag

Boomcore

Trade Mark:

Test Model: IF401

FCC ID: 2BR5T-IF401

Environmental Conditions

Temperature:	23.5℃
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	0.692	2401.688	2402.380	0.5	PASS
BLE_1M	Ant1	2440	0.704	2439.668	2440.372	0.5	PASS
BLE_1M	Ant1	2480	0.700	2479.652	2480.352	0.5	PASS
BLE_2M	Ant1	2402	1.140	2401.452	2402.592	0.5	PASS
BLE_2M	Ant1	2440	1.032	2439.460	2440.492	0.5	PASS
BLE_2M	Ant1	2480	1.136	2479.452	2480.588	0.5	PASS

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

Test Graphs







BLE_2M-Ant1-2440-PASS



BLE_2M-Ant1-2480-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	1.0453	2401.4946	2402.5399	---	---
BLE_1M	Ant1	2440	1.0402	2439.5012	2440.5414	---	---
BLE_1M	Ant1	2480	1.0512	2479.4925	2480.5437	---	---
BLE_2M	Ant1	2402	2.0391	2401.0145	2403.0536	---	---
BLE_2M	Ant1	2440	2.0252	2439.0120	2441.0372	---	---
BLE_2M	Ant1	2480	2.0348	2479.0141	2481.0489	---	---

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

Test Graphs







Appendix C: Maximum peak conducted output power

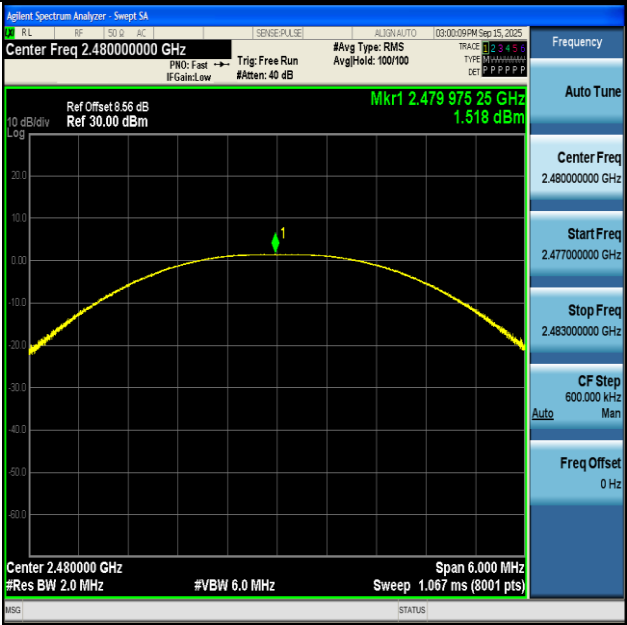
Test Result Peak

Test Mode	Antenna	Frequency [MHz]	Conducted Peak Power [dBm]	Conducted Limit [dBm]	Verdict
BLE_1M	Ant1	2402	0.27	≤30	PASS
BLE_1M	Ant1	2440	1.29	≤30	PASS
BLE_1M	Ant1	2480	1.52	≤30	PASS
BLE_2M	Ant1	2402	0.20	≤30	PASS
BLE_2M	Ant1	2440	1.26	≤30	PASS
BLE_2M	Ant1	2480	1.47	≤30	PASS

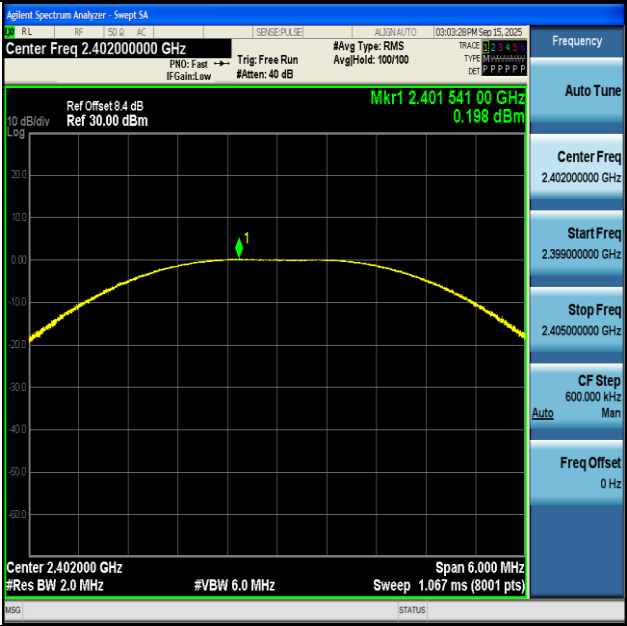
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)

Test Graphs Peak

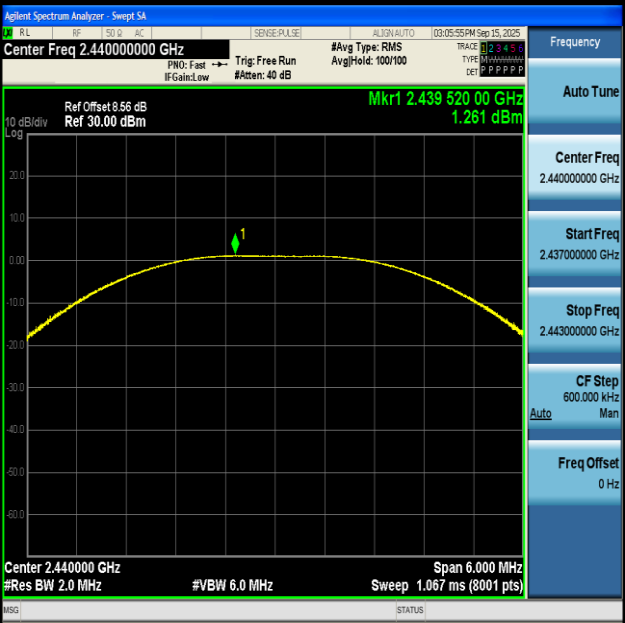




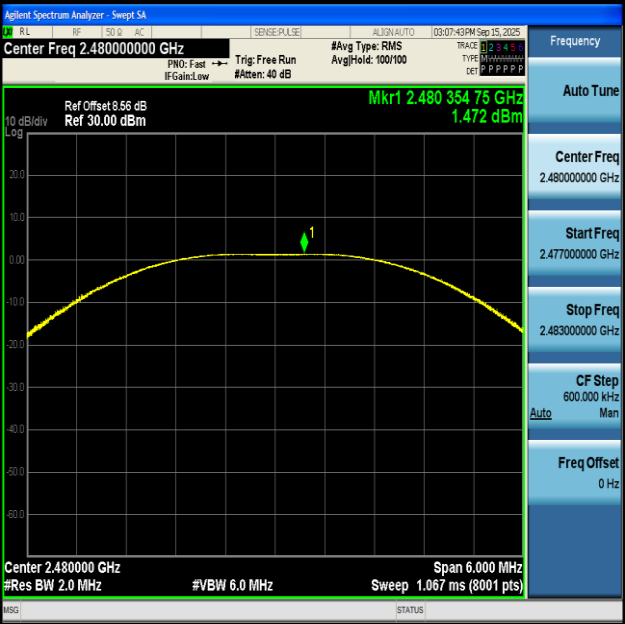
BLE_1M-Ant1-2480-PASS



BLE_2M-Ant1-2402-PASS



BLE_2M-Ant1-2440-PASS



BLE_2M-Ant1-2480-PASS

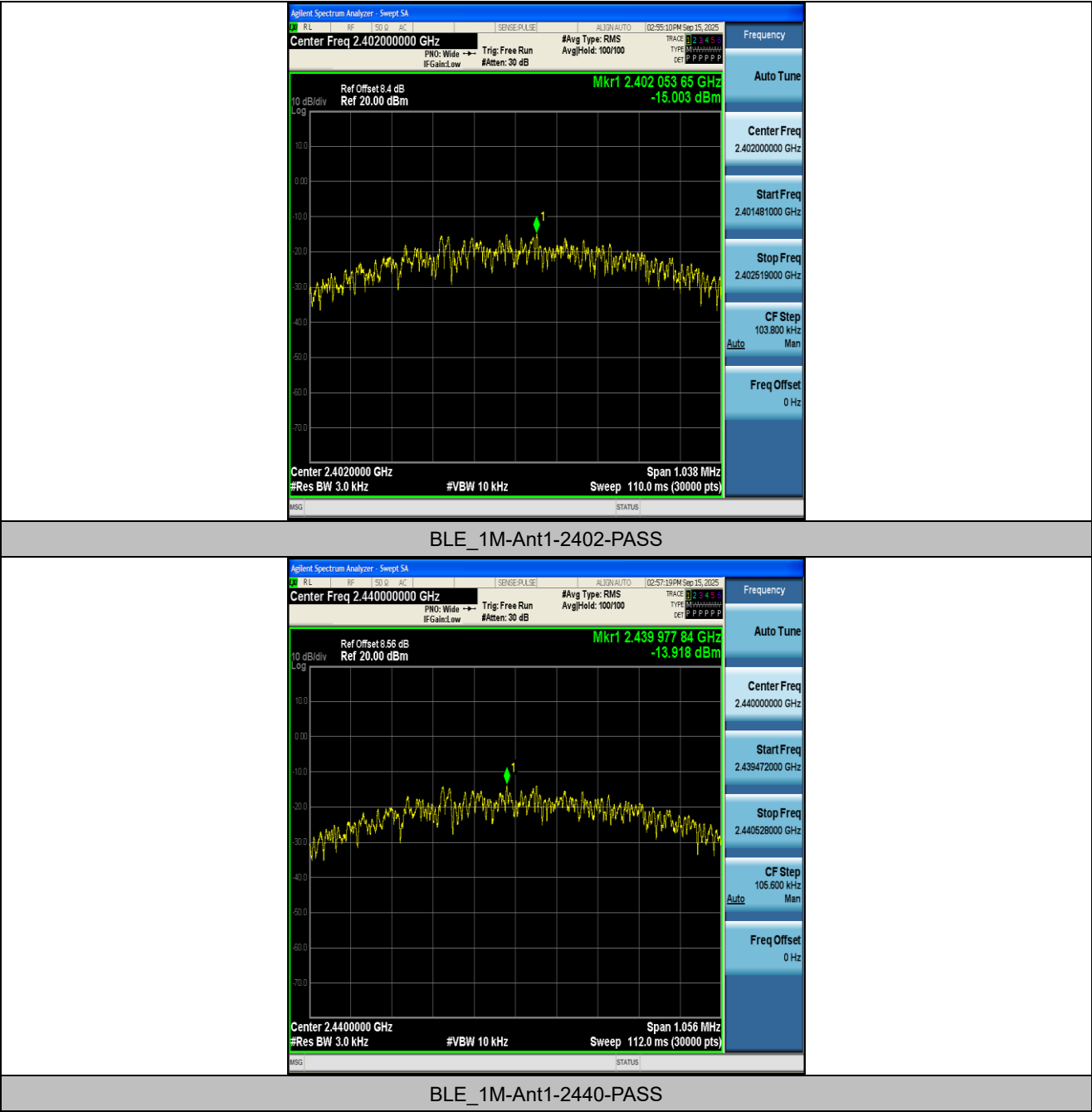
Appendix D: Maximum peak power spectral density

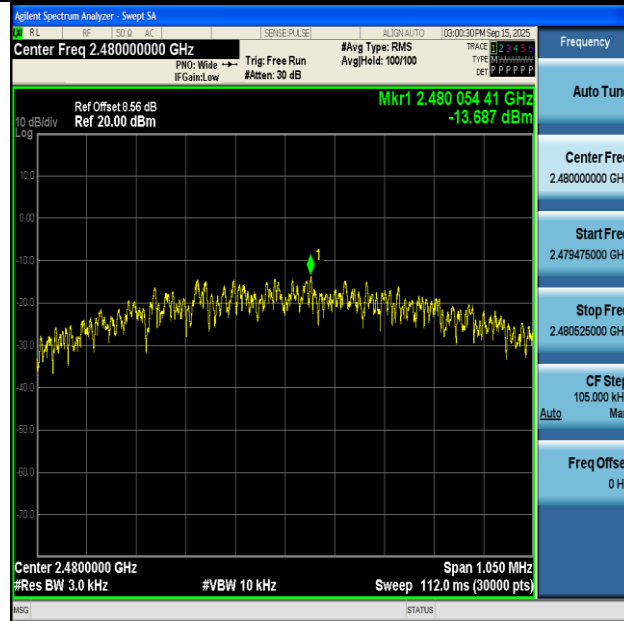
Test Result

Test Mode	Antenna	Frequency [MHz]	Result [dBm/3kHz]	Limit [dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-15.00	≤8.00	PASS
BLE_1M	Ant1	2440	-13.92	≤8.00	PASS
BLE_1M	Ant1	2480	-13.69	≤8.00	PASS
BLE_2M	Ant1	2402	-17.33	≤8.00	PASS
BLE_2M	Ant1	2440	-16.42	≤8.00	PASS
BLE_2M	Ant1	2480	-16.06	≤8.00	PASS

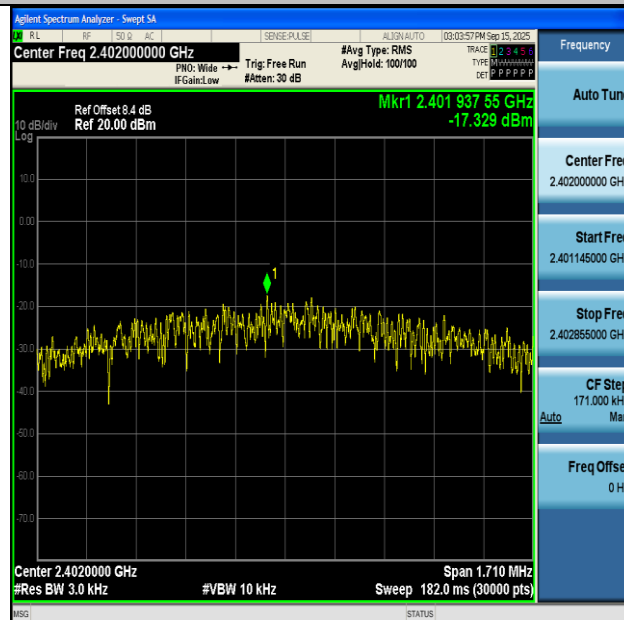
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)

Test Graphs

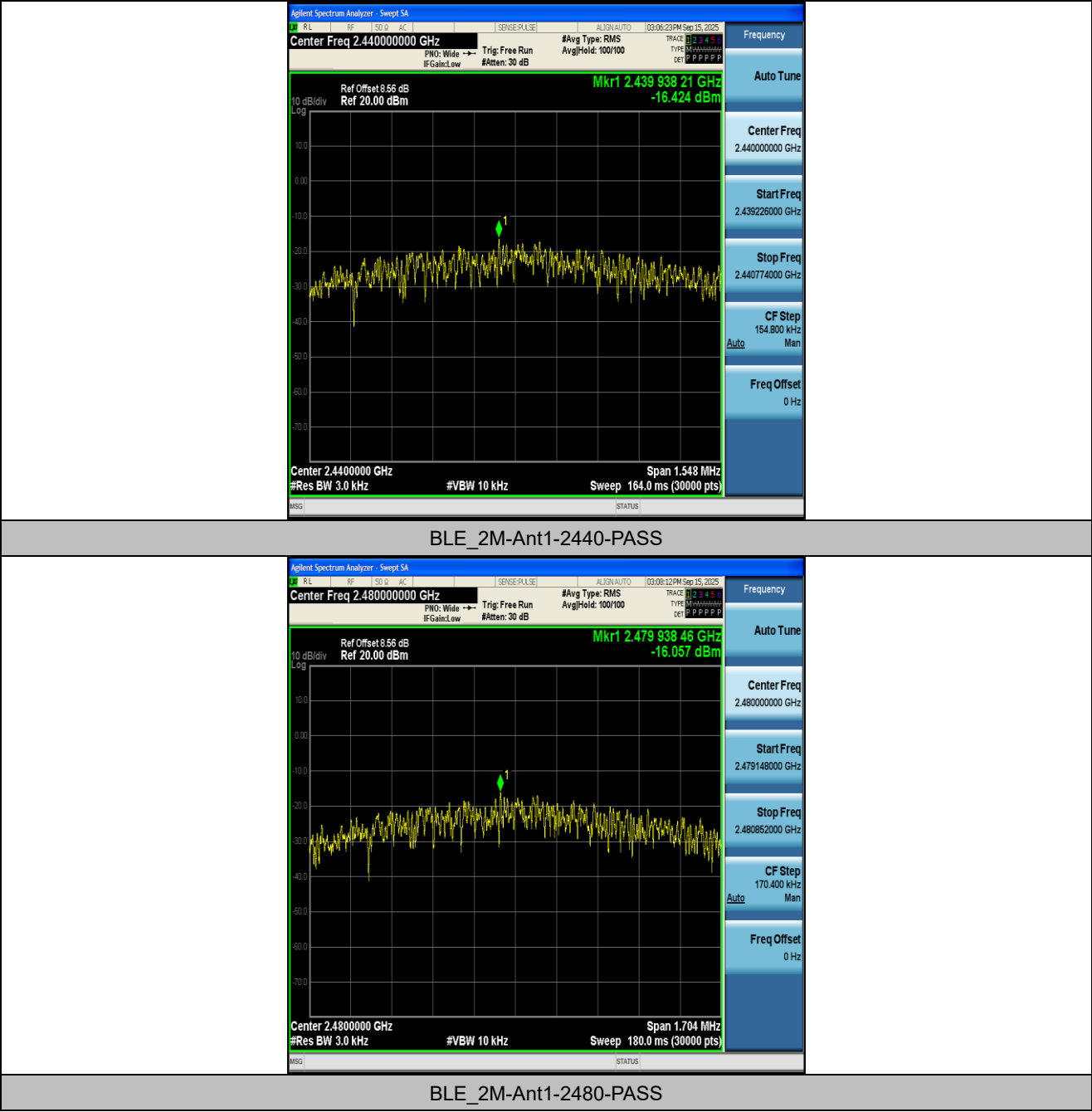




BLE_1M-Ant1-2480-PASS



BLE_2M-Ant1-2402-PASS



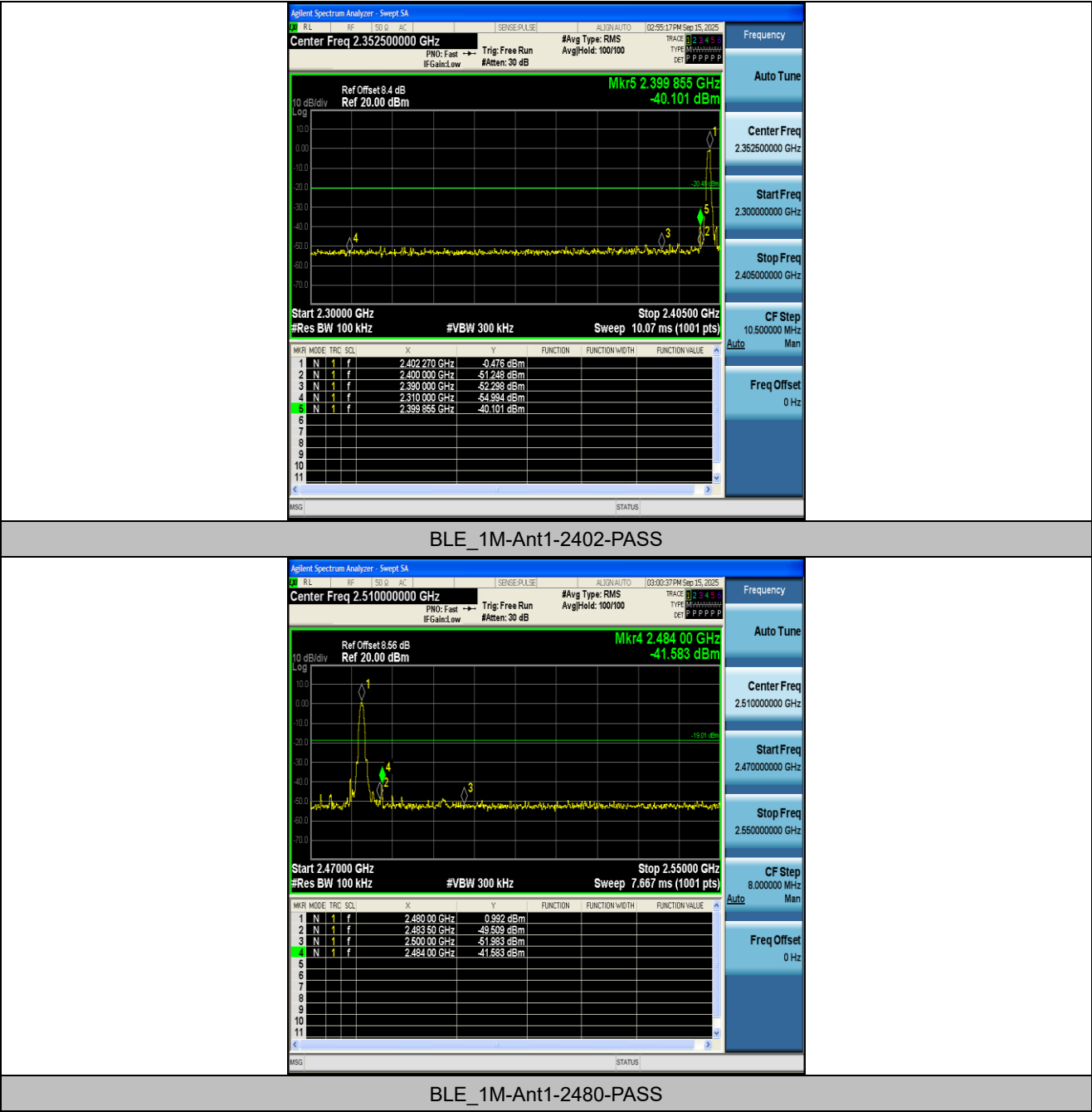
Appendix E: Band edge measurements

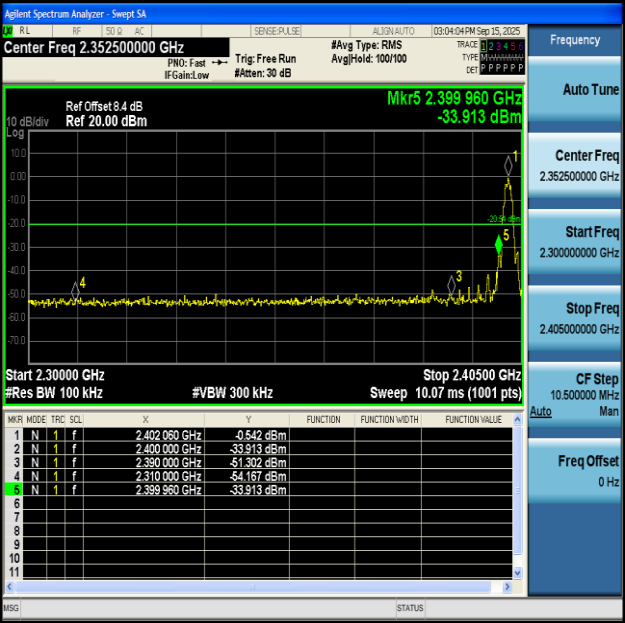
Test Result

Test Mode	Antenna	Ch. Name	Frequency [MHz]	Ref. Level [dBm]	Result [dBm]	Limit [dBm]	Verdict
BLE_1M	Ant1	Low	2402	-0.48	-40.1	≤-20.48	PASS
BLE_1M	Ant1	High	2480	0.99	-41.58	≤-19.01	PASS
BLE_2M	Ant1	Low	2402	-0.54	-33.91	≤-20.54	PASS
BLE_2M	Ant1	High	2480	-0.26	-42.68	≤-20.26	PASS

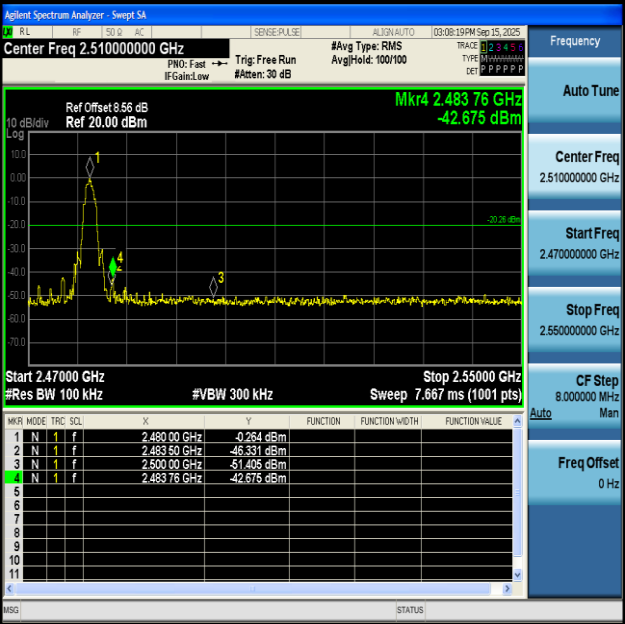
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)

Test Graphs





BLE_2M-Ant1-2402-PASS



BLE_2M-Ant1-2480-PASS

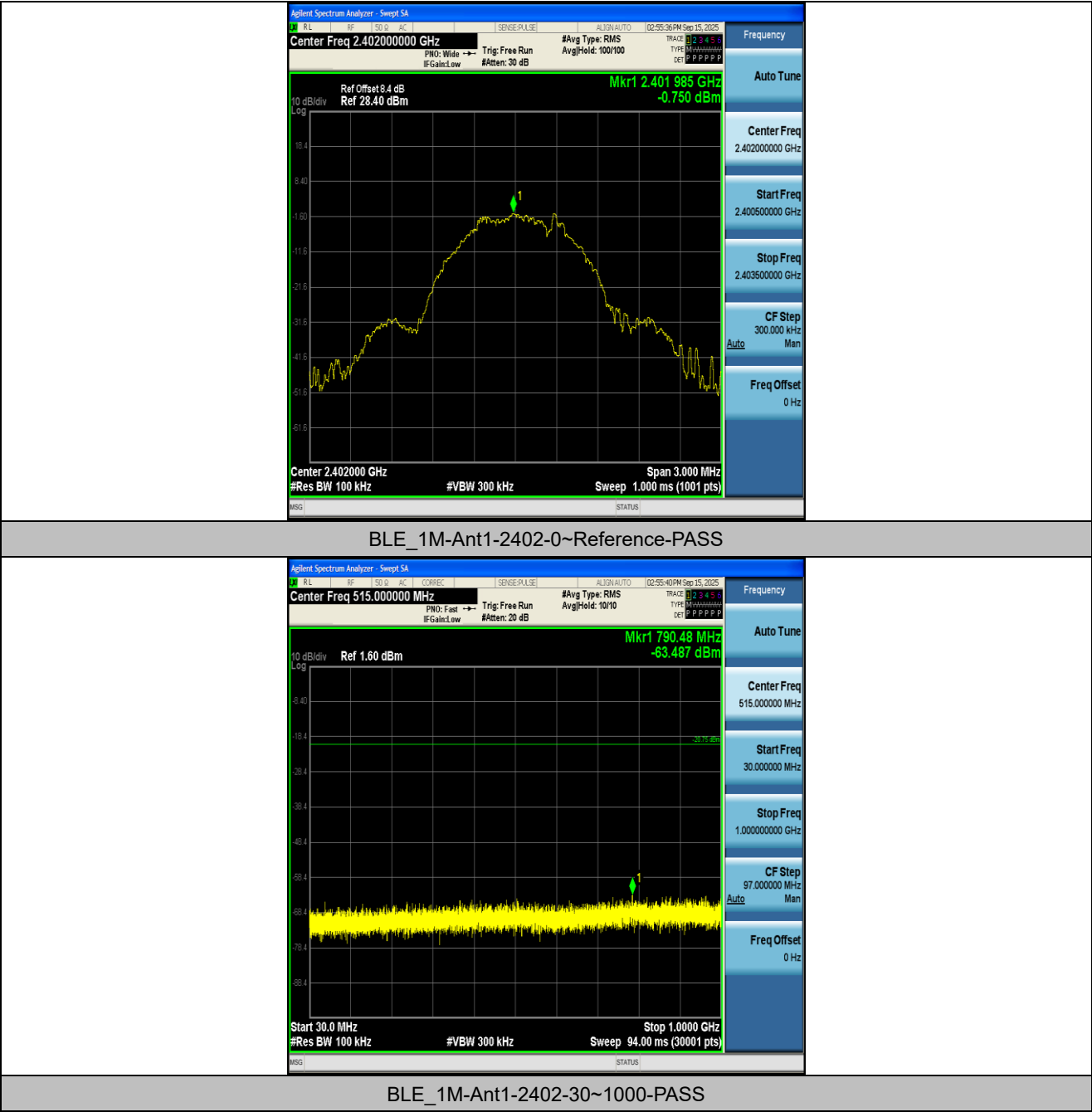
Appendix F: Conducted Spurious Emission

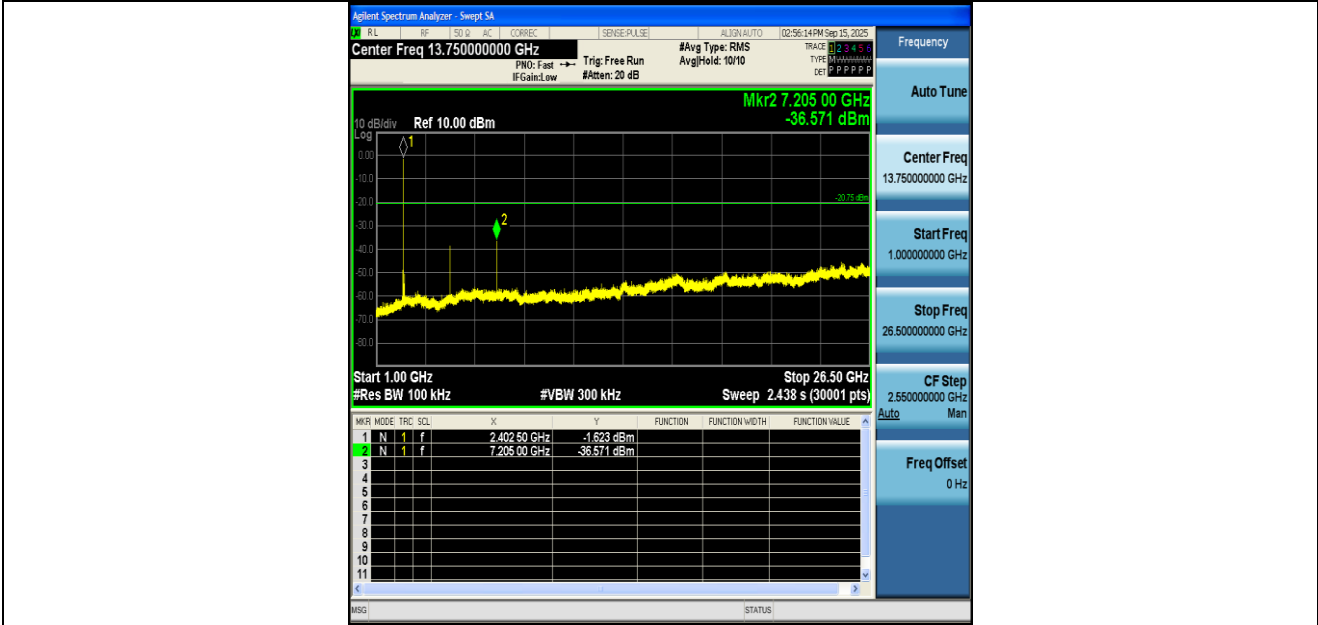
Test Result

Test Mode	Antenna	Frequency [MHz]	Freq. Range [MHz]	Ref. Level [dBm]	Result [dBm]	Limit [dBm]	Verdict
BLE_1M	Ant1	2402	0~Reference	-0.75	-0.75	---	PASS
BLE_1M	Ant1	2402	30~1000	-0.75	-63.49	≤-20.75	PASS
BLE_1M	Ant1	2402	1000~26500	-0.75	-36.57	≤-20.75	PASS
BLE_1M	Ant1	2440	0~Reference	0.45	0.45	---	PASS
BLE_1M	Ant1	2440	30~1000	0.45	-62.55	≤-19.55	PASS
BLE_1M	Ant1	2440	1000~26500	0.45	-39.28	≤-19.55	PASS
BLE_1M	Ant1	2480	0~Reference	0.29	0.29	---	PASS
BLE_1M	Ant1	2480	30~1000	0.29	-62.94	≤-19.71	PASS
BLE_1M	Ant1	2480	1000~26500	0.29	-40.34	≤-19.71	PASS
BLE_2M	Ant1	2402	0~Reference	-0.57	-0.57	---	PASS
BLE_2M	Ant1	2402	30~1000	-0.57	-63.73	≤-20.57	PASS
BLE_2M	Ant1	2402	1000~26500	-0.57	-39.6	≤-20.57	PASS
BLE_2M	Ant1	2440	0~Reference	0.29	0.29	---	PASS
BLE_2M	Ant1	2440	30~1000	0.29	-61.86	≤-19.71	PASS
BLE_2M	Ant1	2440	1000~26500	0.29	-36.98	≤-19.71	PASS
BLE_2M	Ant1	2480	0~Reference	0.52	0.52	---	PASS
BLE_2M	Ant1	2480	30~1000	0.52	-63.66	≤-19.48	PASS
BLE_2M	Ant1	2480	1000~26500	0.52	-40.79	≤-19.48	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

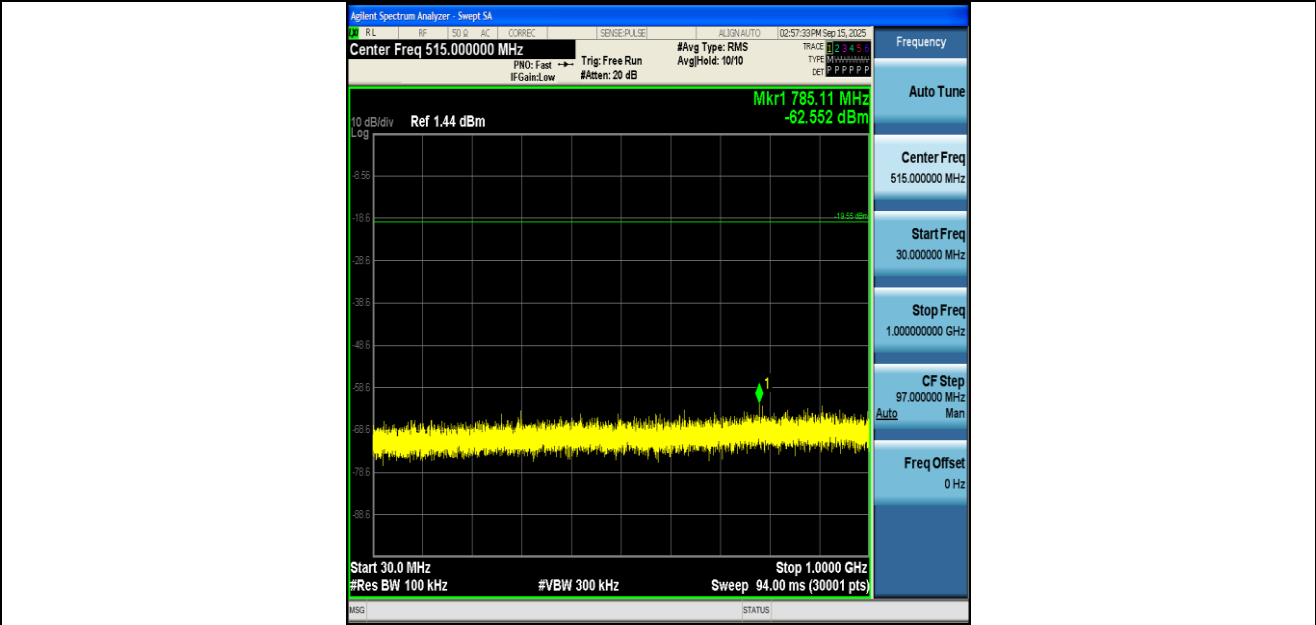




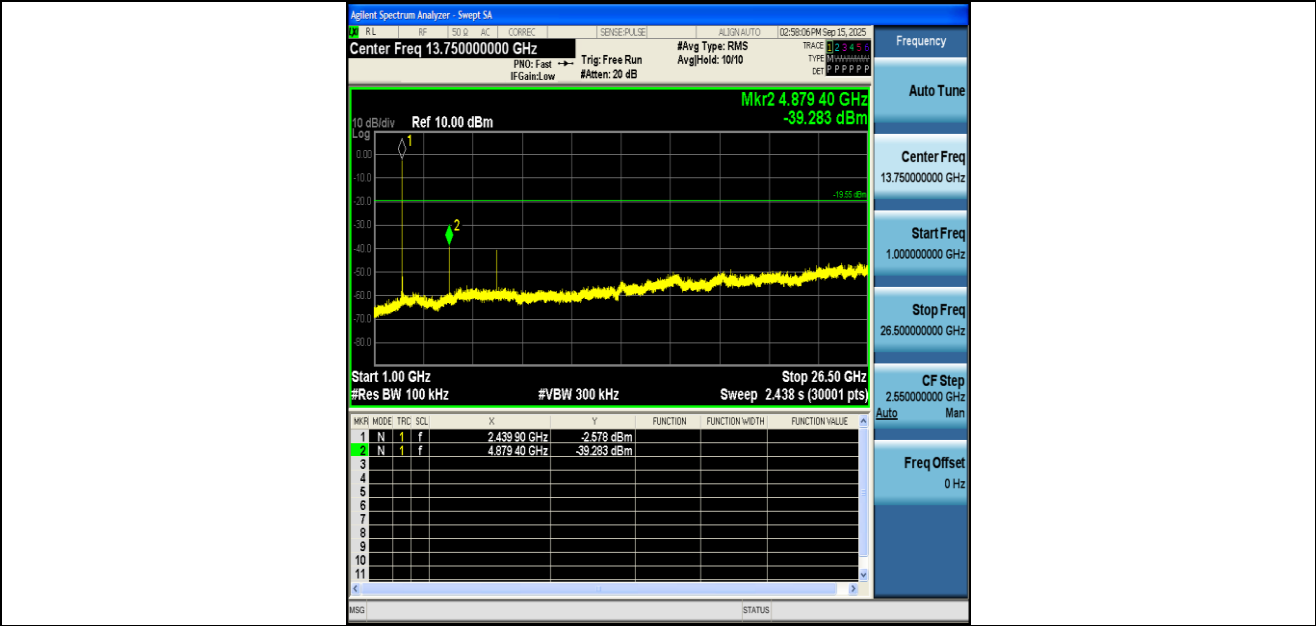
BLE_1M-Ant1-2402-1000~26500-PASS



BLE_1M-Ant1-2440-0~Reference-PASS

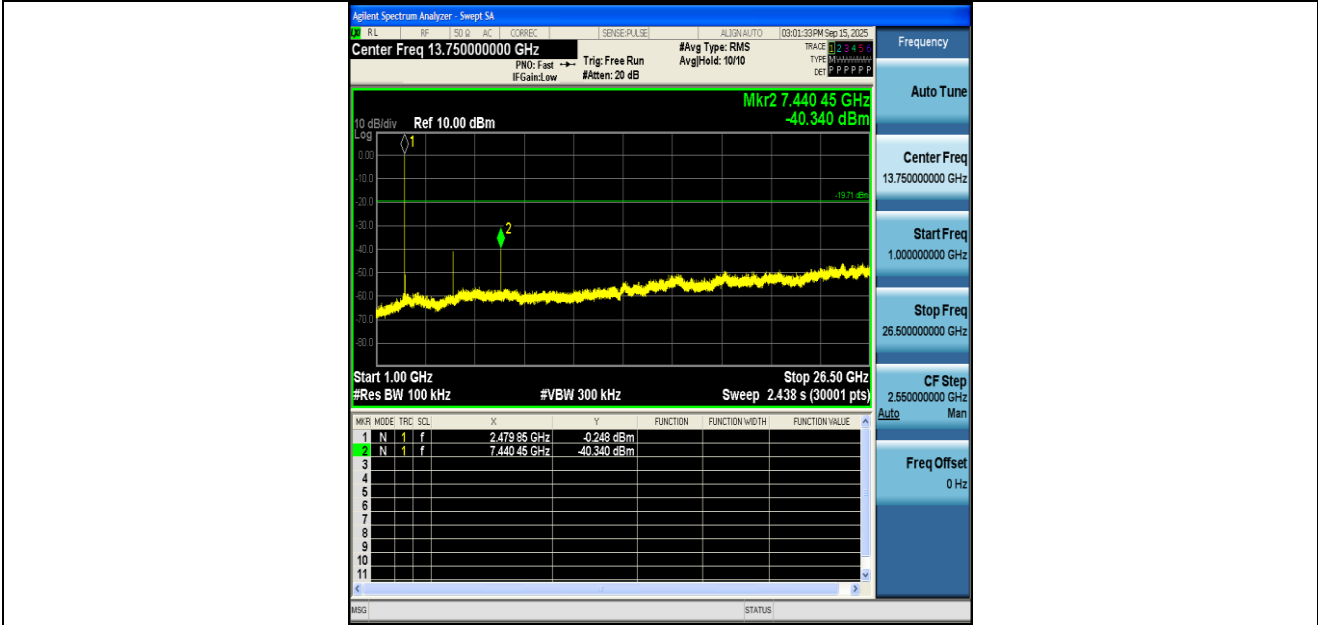


BLE_1M-Ant1-2440-30~1000-PASS



BLE_1M-Ant1-2440-1000~26500-PASS

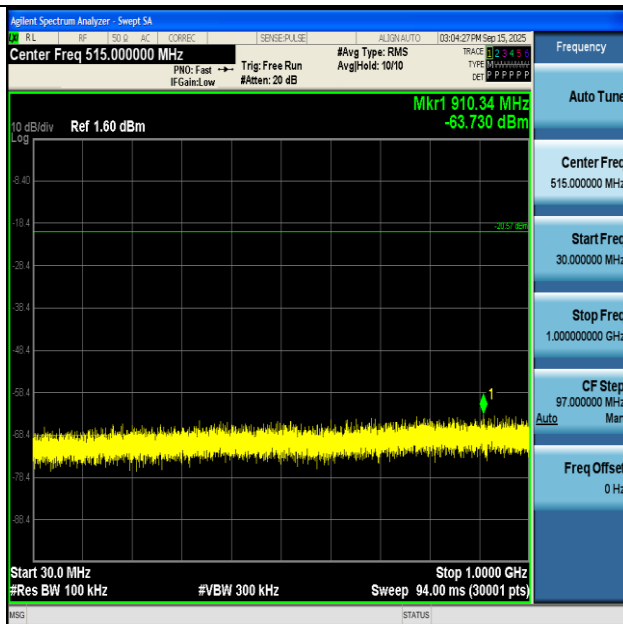




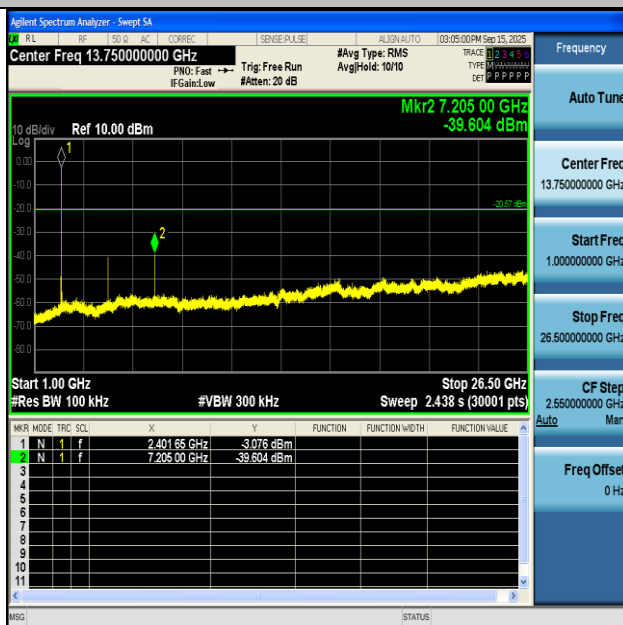
BLE_1M-Ant1-2480-1000~26500-PASS



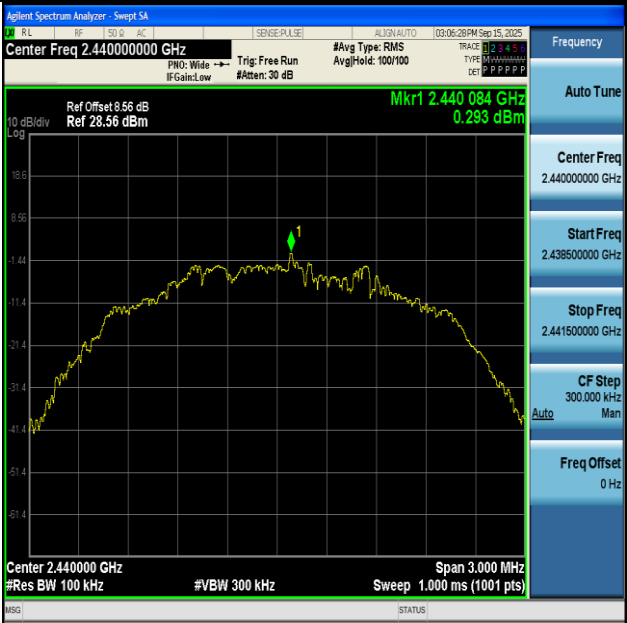
BLE_2M-Ant1-2402-0~Reference-PASS



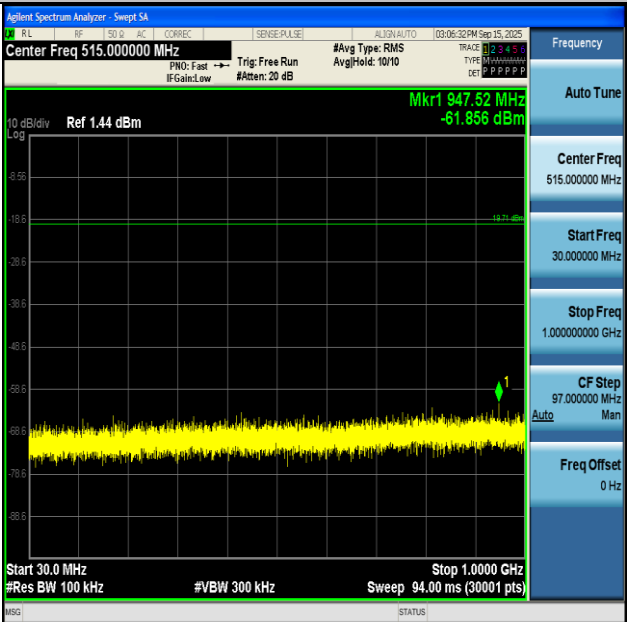
BLE 2M-Ant1-2402-30~1000-PASS



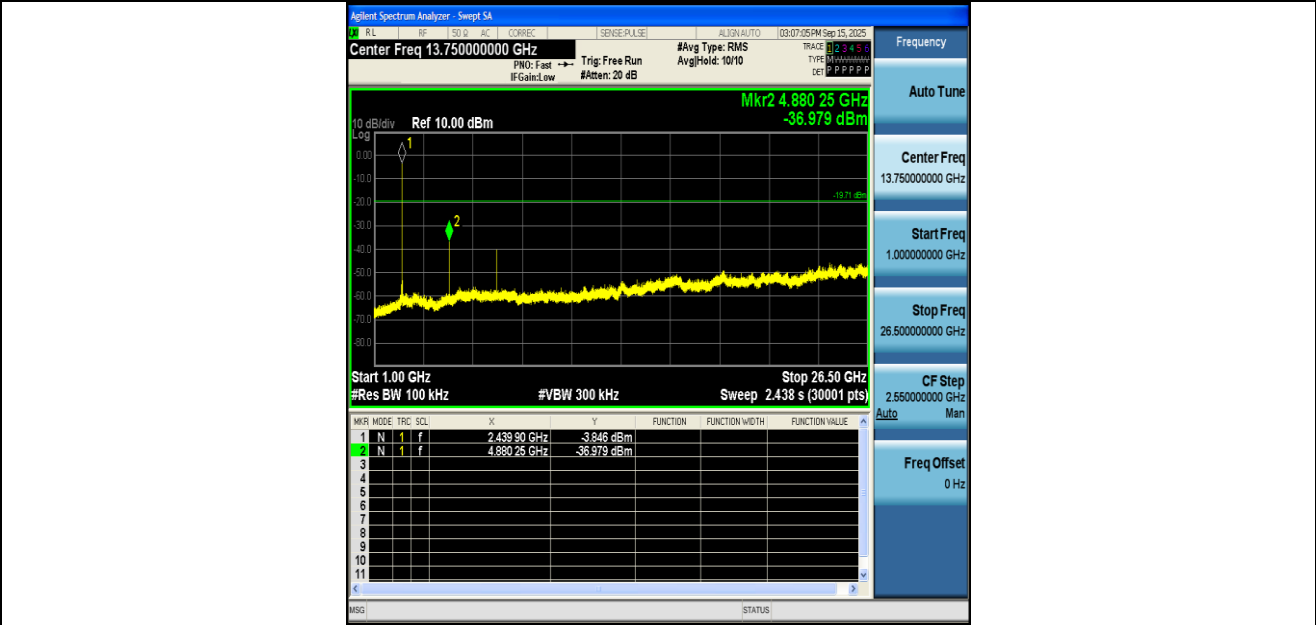
BLE 2M-Ant1-2402-1000~26500-PASS



BLE_2M-Ant1-2440-0~Reference-PASS



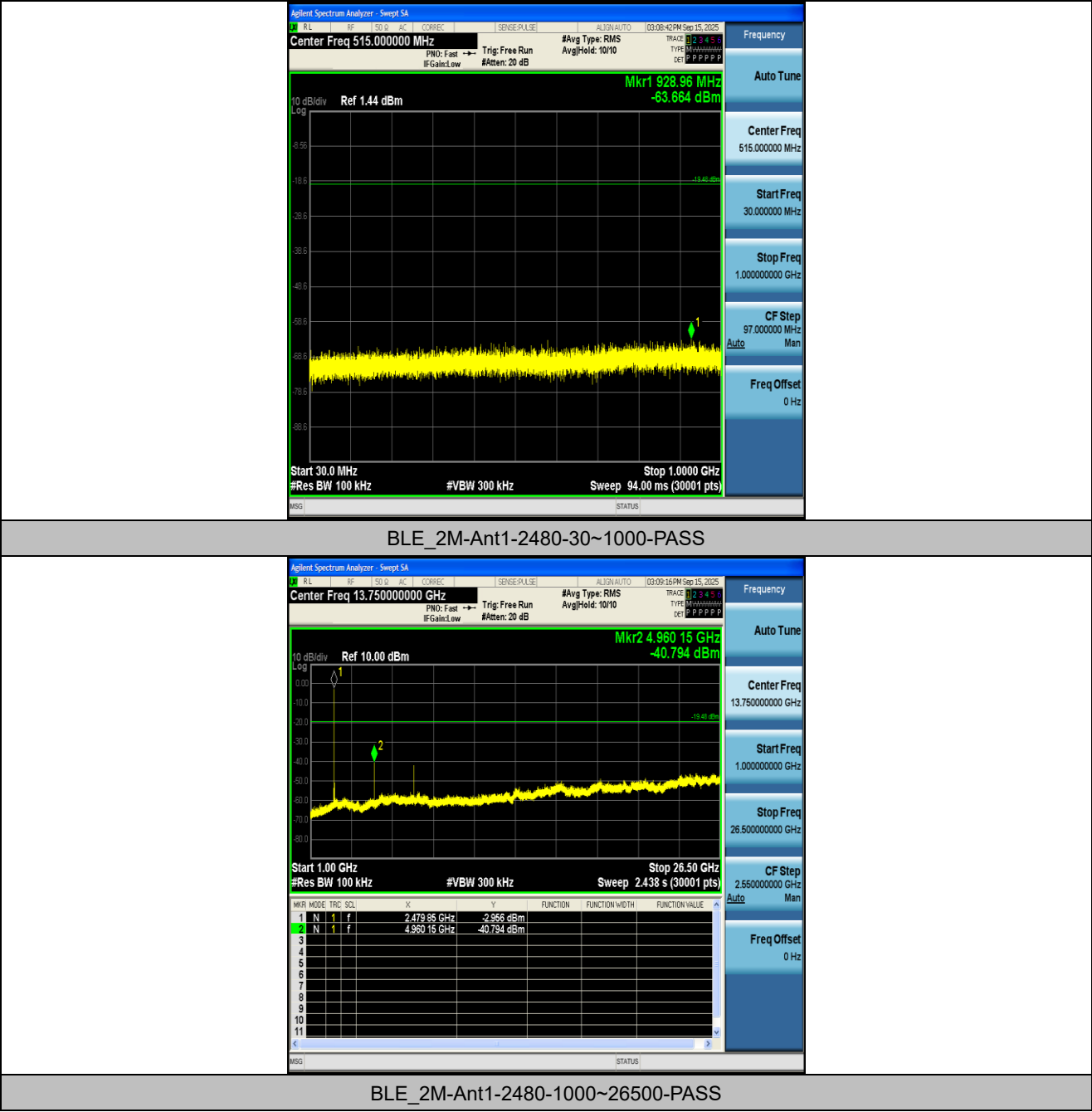
BLE_2M-Ant1-2440-30~1000-PASS



BLE_2M-Ant1-2440-1000~26500-PASS



BLE_2M-Ant1-2480-0~Reference-PASS



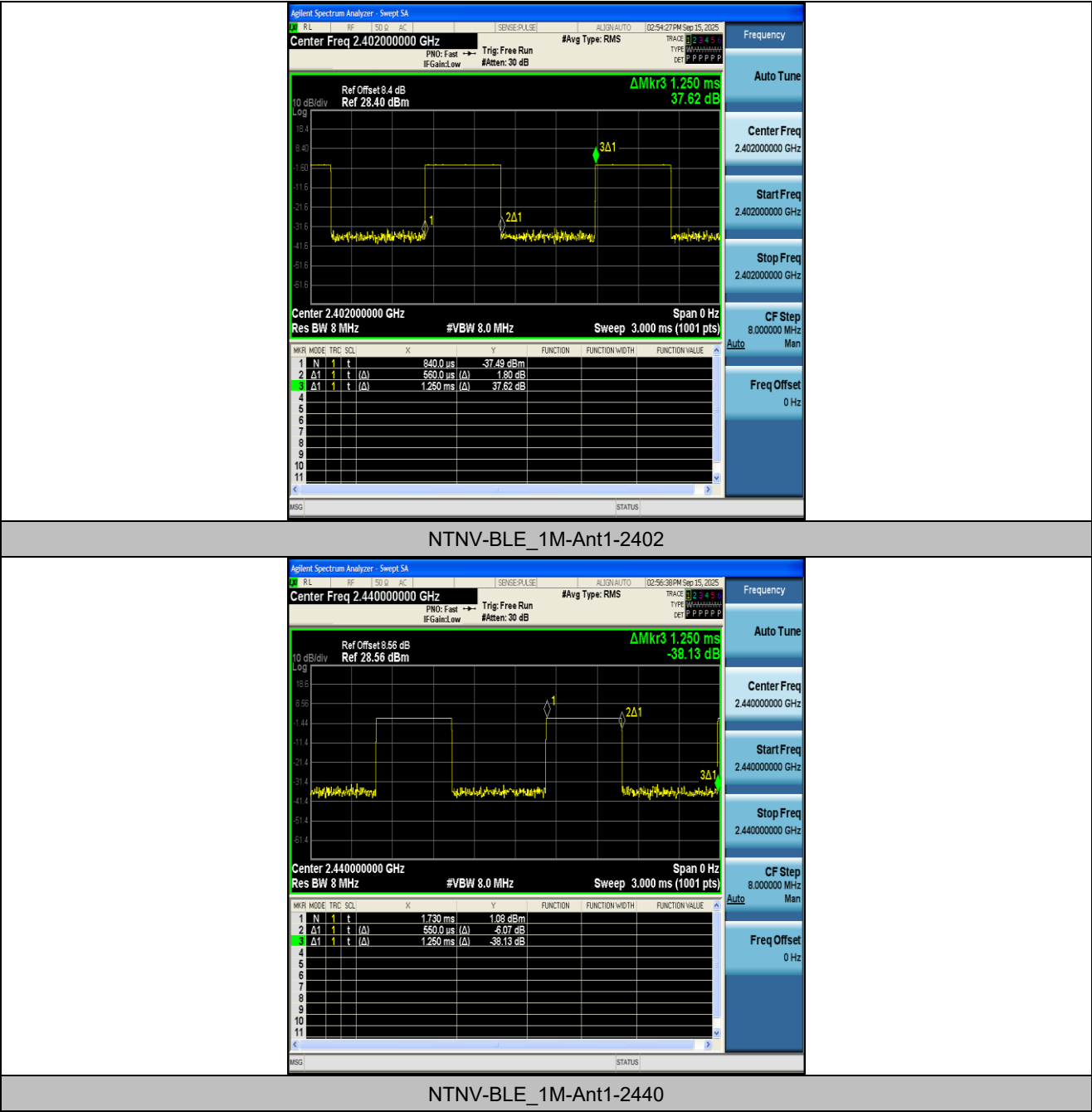
Appendix G: Duty Cycle

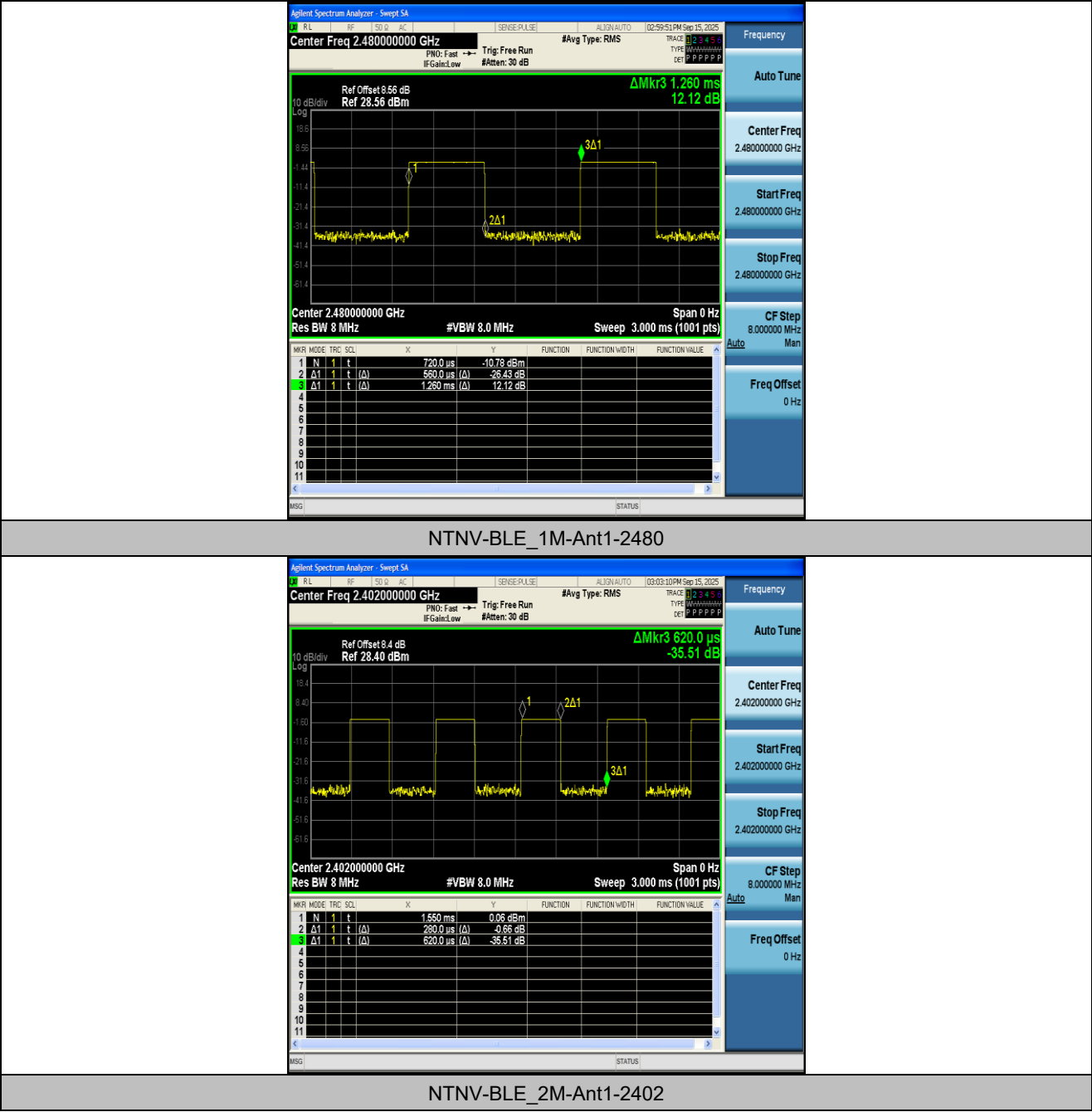
Test Result

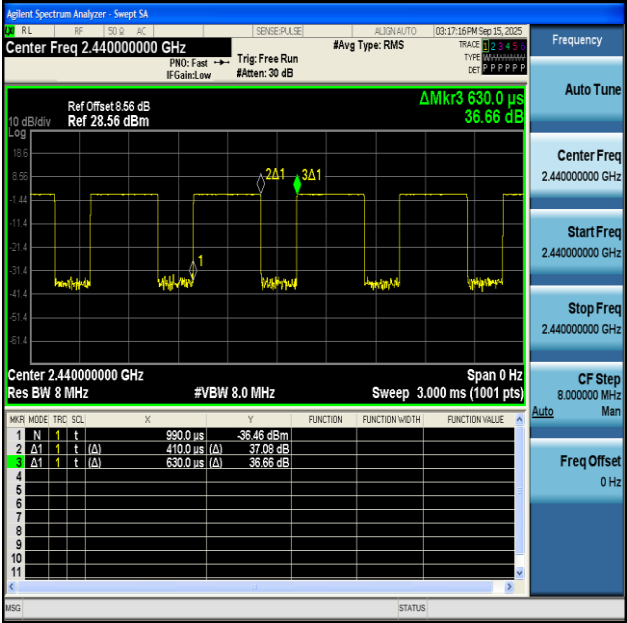
Test Mode	Antenna	Frequency [MHz]	ON Time [ms]	Period [ms]	Duty Cycle [%]	Duty Cycle Factor [dB]
BLE_1M	Ant1	2402	0.56	1.25	44.80	3.49
BLE_1M	Ant1	2440	0.55	1.25	44.00	3.57
BLE_1M	Ant1	2480	0.56	1.26	44.44	3.52
BLE_2M	Ant1	2402	0.28	0.62	45.16	3.45
BLE_2M	Ant1	2440	0.41	0.63	65.08	1.87
BLE_2M	Ant1	2480	0.40	0.62	64.52	1.90

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

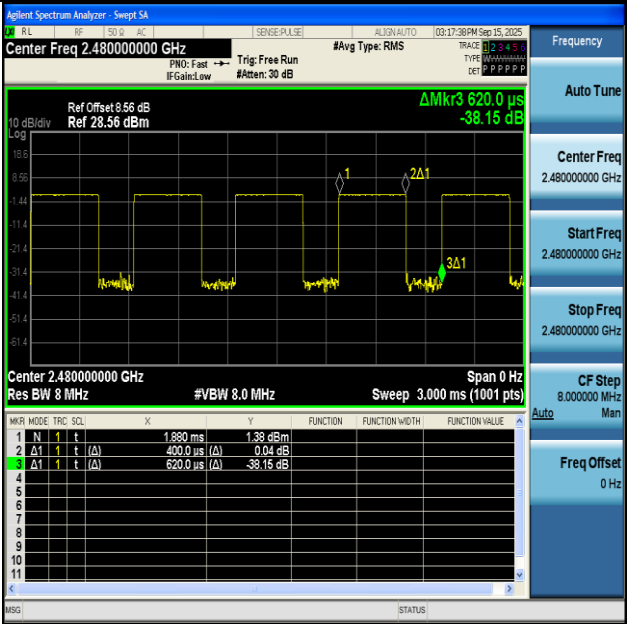
Test Graphs







NTNV-BLE_2M-Ant1-2440



NTNV-BLE_2M-Ant1-2480