



Appendix Test Data for BLE (Conducted Measurement)

Product Name: Bluetooth Keyboard

Trade Mark: ZAGG

Test Model: ZKB105PMN53

FCC ID: QTG-ZKPXN

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	0.764	2401.604	2402.368	0.5	PASS
BLE_1M	Ant1	2440	0.736	2439.616	2440.352	0.5	PASS
BLE_1M	Ant1	2480	0.760	2479.616	2480.376	0.5	PASS

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





Test Graphs





BLE_1M-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	1.1193	2401.4334	2402.5527	---	---
BLE_1M	Ant1	2440	1.1039	2439.4429	2440.5468	---	---
BLE_1M	Ant1	2480	1.0889	2479.4495	2480.5384	---	---

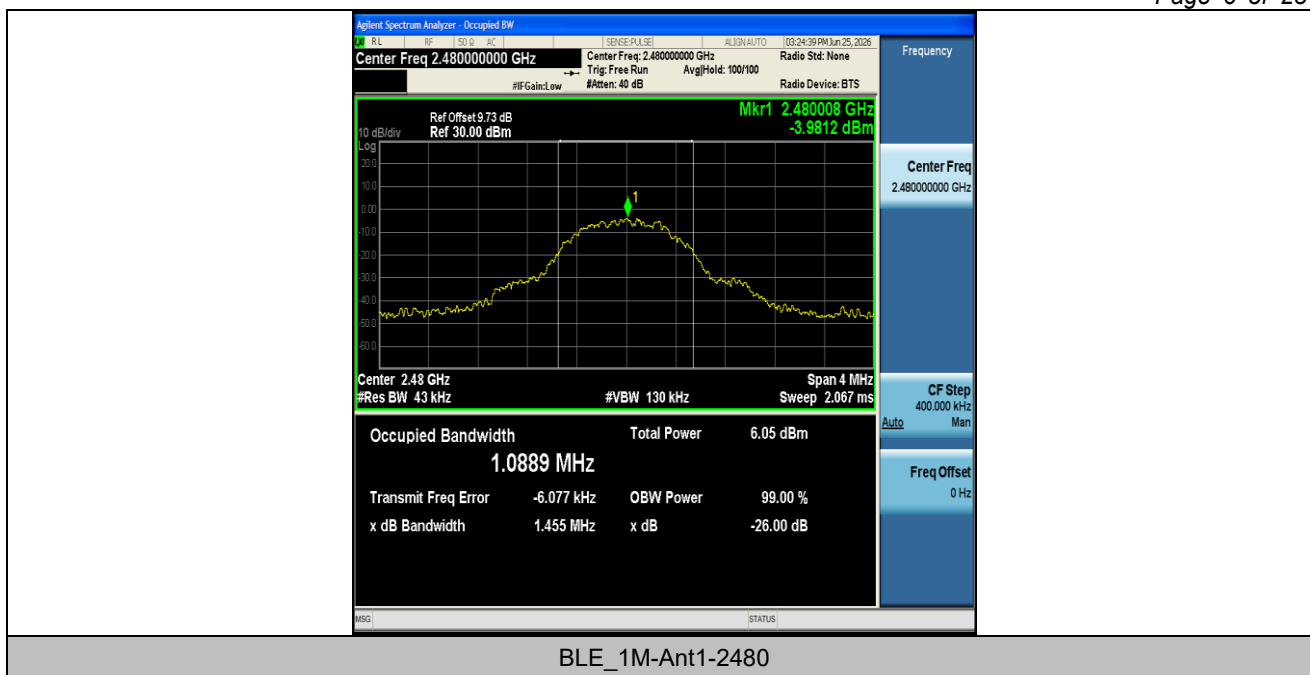
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)





Test Graphs







Appendix C: Maximum peak conducted output power

Test Result Peak

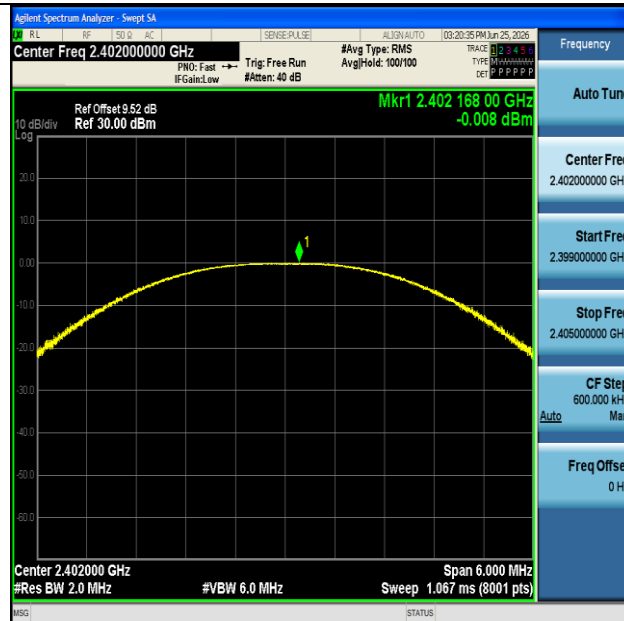
Test Mode	Antenna	Frequency [MHz]	Conducted Peak Power [dBm]	Conducted Limit [dBm]	Verdict
BLE_1M	Ant1	2402	-0.01	≤30	PASS
BLE_1M	Ant1	2440	-0.14	≤30	PASS
BLE_1M	Ant1	2480	-0.39	≤30	PASS

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

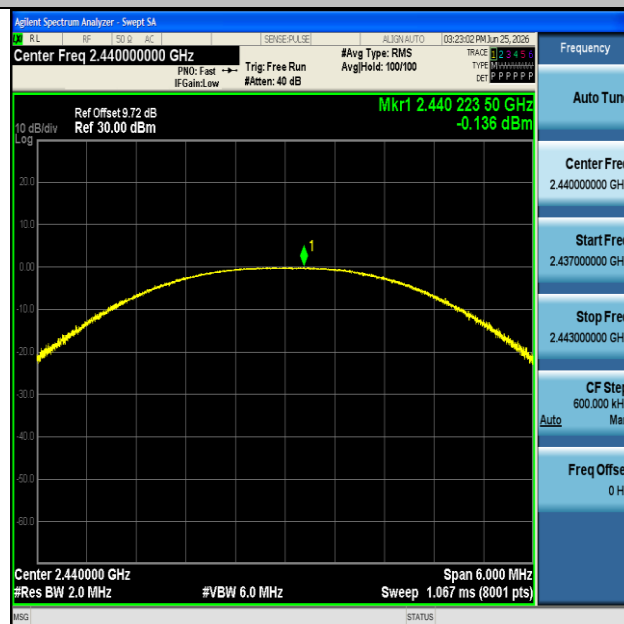




Test Graphs Peak

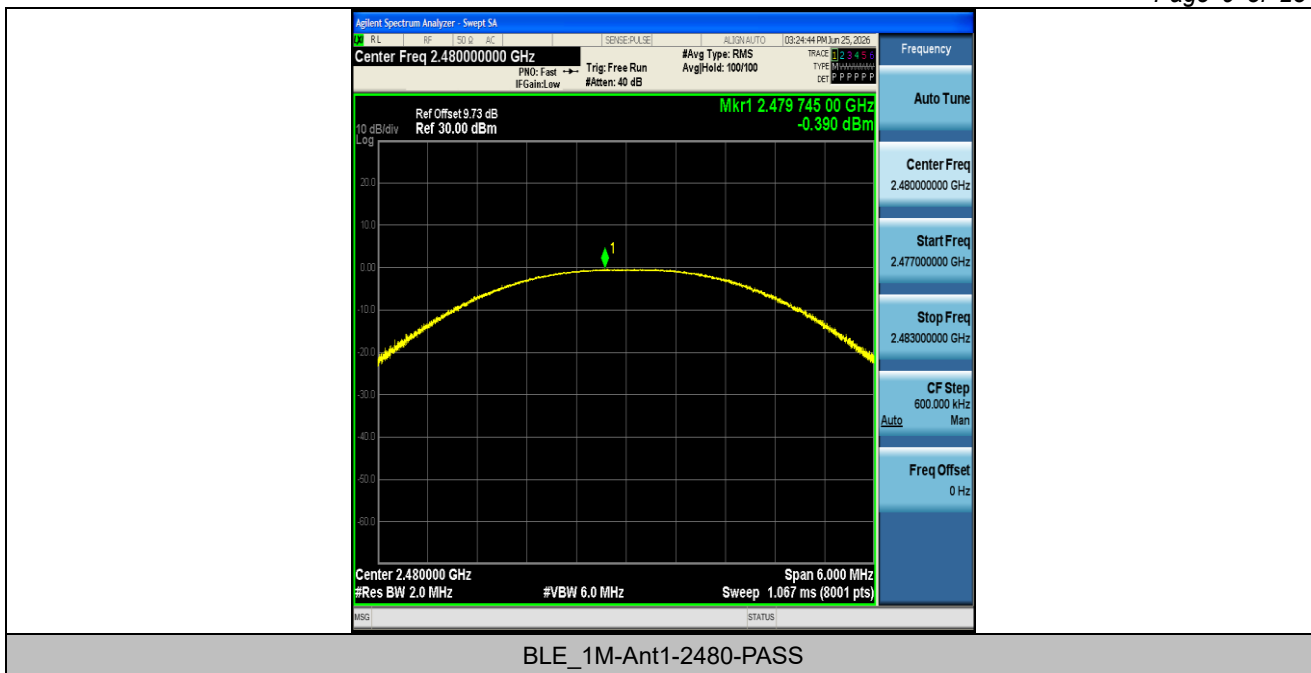


BLE_1M-Ant1-2402-PASS



BLE_1M-Ant1-2440-PASS







Appendix D: Maximum peak power spectral density

Test Result

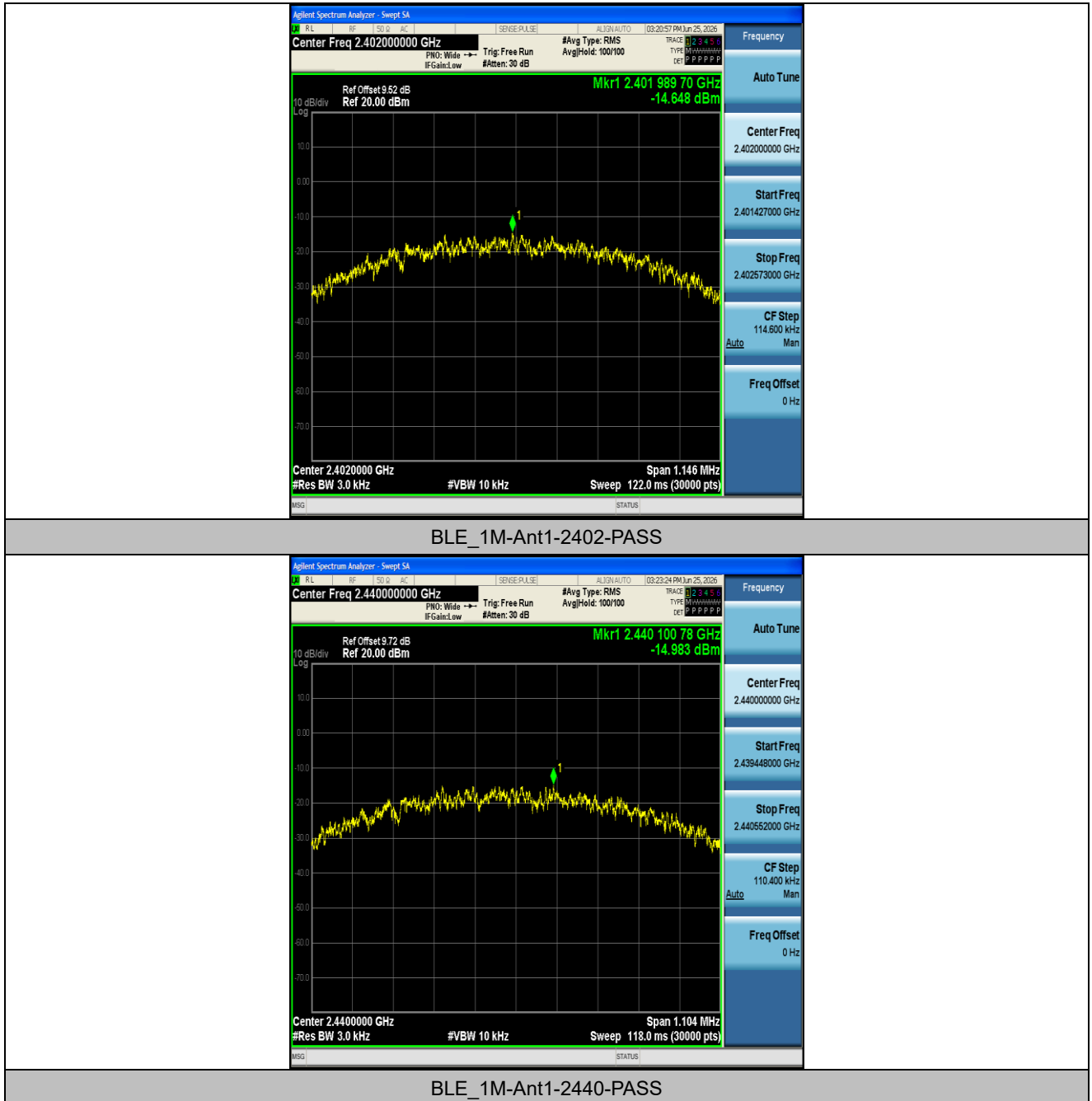
Test Mode	Antenna	Frequency [MHz]	Result [dBm/3kHz]	Limit [dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-14.65	≤8.00	PASS
BLE_1M	Ant1	2440	-14.98	≤8.00	PASS
BLE_1M	Ant1	2480	-14.53	≤8.00	PASS

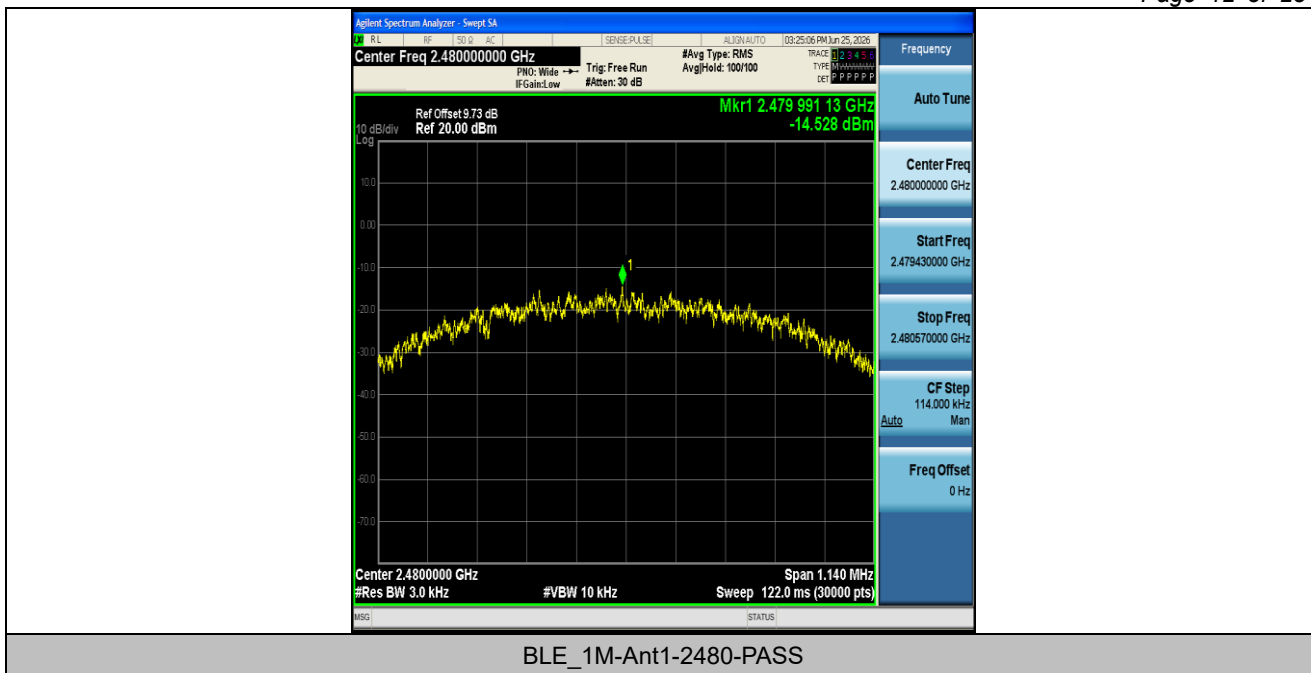
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)





Test Graphs







Appendix E: Band edge measurements

Test Result

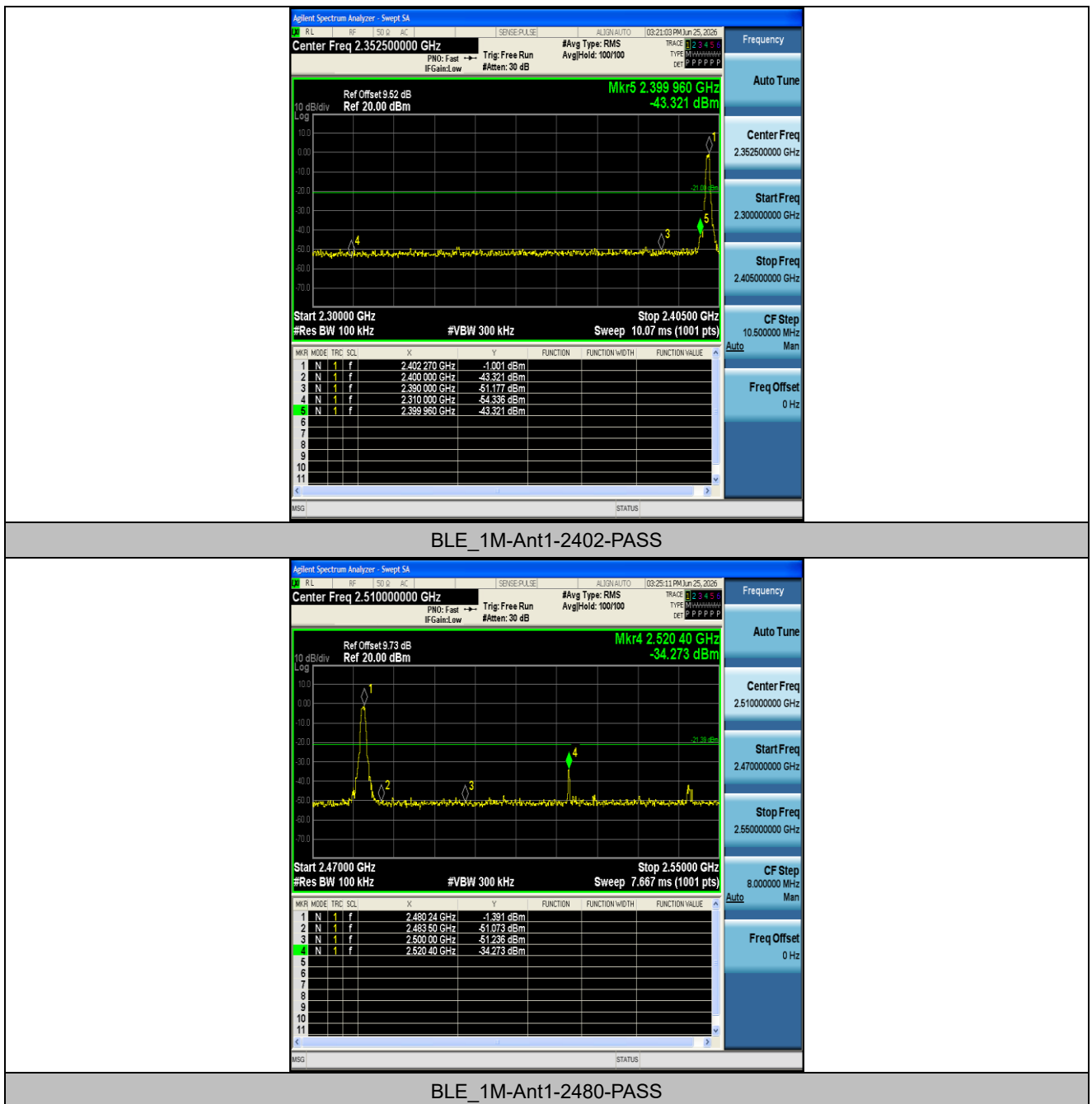
Test Mode	Antenna	Ch. Name	Frequency [MHz]	Ref. Level [dBm]	Result [dBm]	Limit [dBm]	Verdict
BLE_1M	Ant1	Low	2402	-1.00	-43.32	≤-21	PASS
BLE_1M	Ant1	High	2480	-1.39	-34.27	≤-21.39	PASS

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





Test Graphs





Appendix F: Conducted Spurious Emission

Test Result

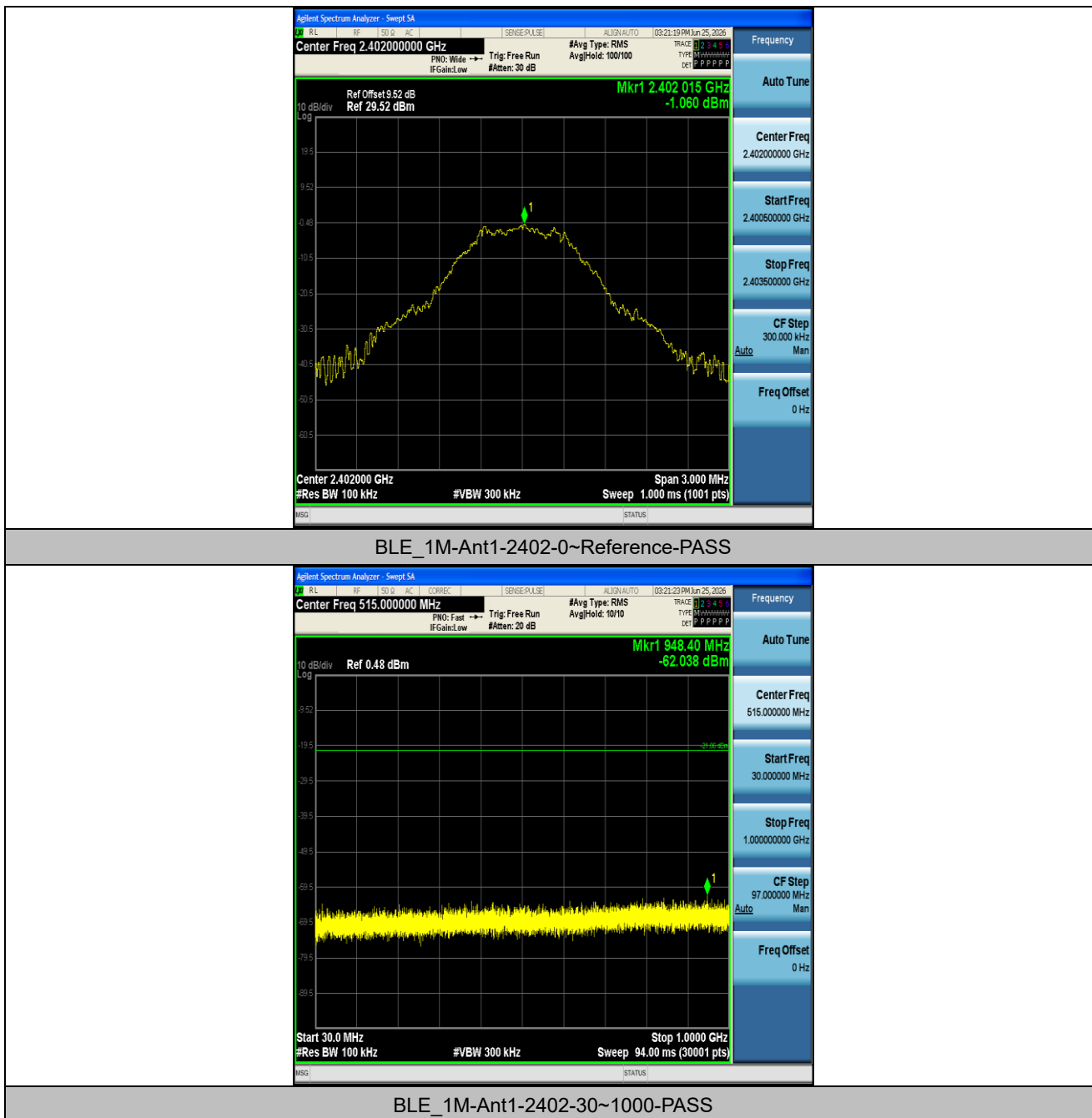
Test Mode	Antenna	Frequency [MHz]	Freq. Range [MHz]	Ref. Level [dBm]	Result [dBm]	Limit [dBm]	Verdict
BLE_1M	Ant1	2402	0~Reference	-1.06	-1.06	---	PASS
BLE_1M	Ant1	2402	30~1000	-1.06	-62.04	≤-21.06	PASS
BLE_1M	Ant1	2402	1000~26500	-1.06	-36.85	≤-21.06	PASS
BLE_1M	Ant1	2440	0~Reference	-1.64	-1.64	---	PASS
BLE_1M	Ant1	2440	30~1000	-1.64	-62.46	≤-21.64	PASS
BLE_1M	Ant1	2440	1000~26500	-1.64	-37.6	≤-21.64	PASS
BLE_1M	Ant1	2480	0~Reference	-1.63	-1.63	---	PASS
BLE_1M	Ant1	2480	30~1000	-1.63	-61.32	≤-21.63	PASS
BLE_1M	Ant1	2480	1000~26500	-1.63	-36.97	≤-21.63	PASS

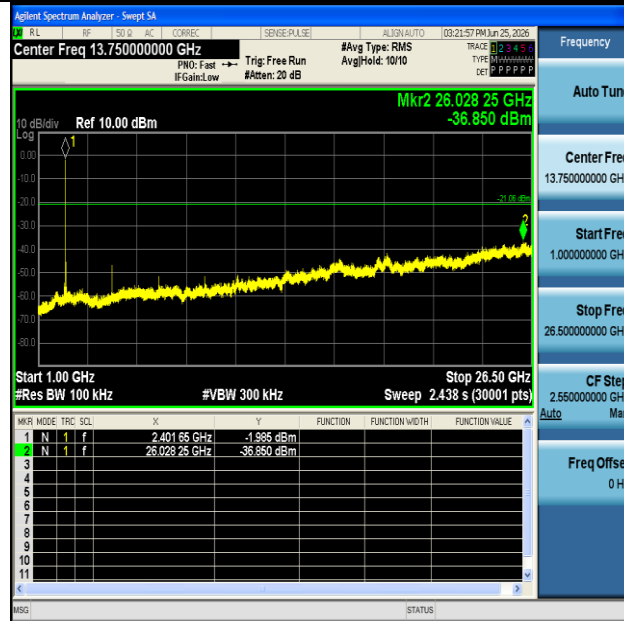
Note: offset(dB) in Reference test plots = cable loss(dB) + attenuator factor(dB); For spurious emissions plots from 30MHz to 26.5GHz, the cable loss and attenuator factors have been set in the 'Input Correction' of the Spectrum Analyzer during the test.





Test Graphs



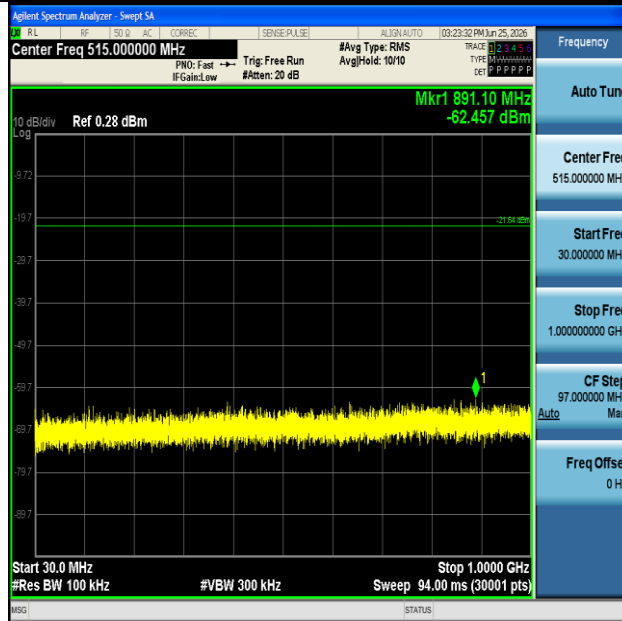


BLE_1M-Ant1-2402-1000~26500-PASS

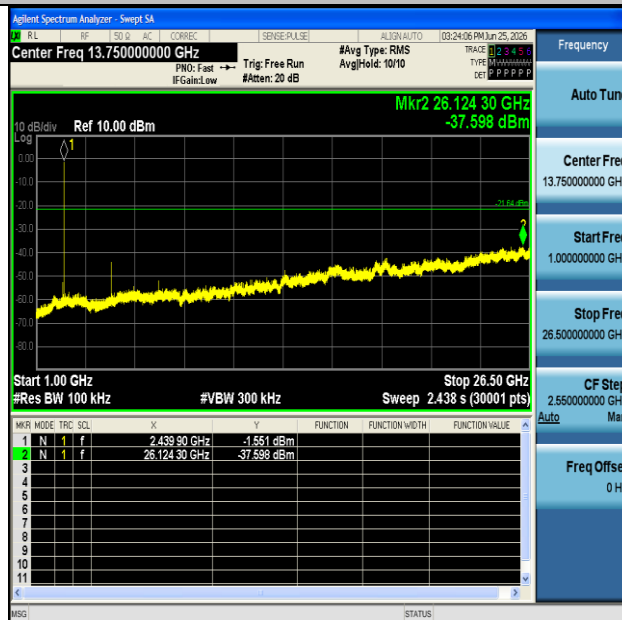


BLE_1M-Ant1-2440-0~Reference-PASS



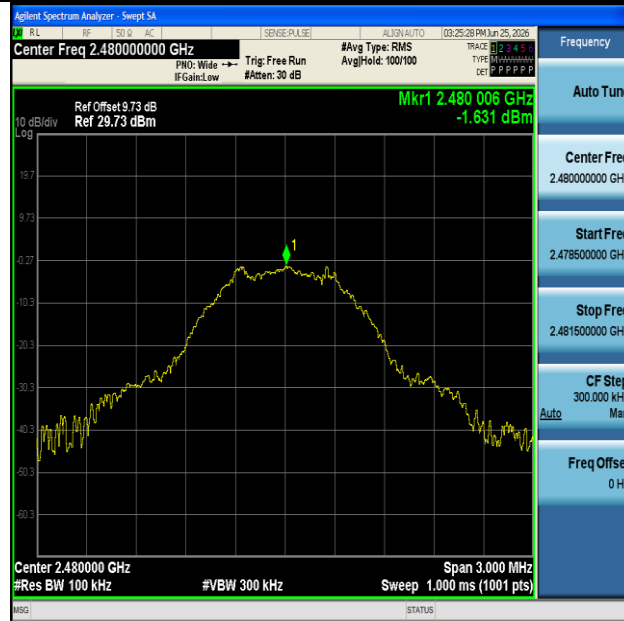


BLE_1M-Ant1-2440-30~1000-PASS

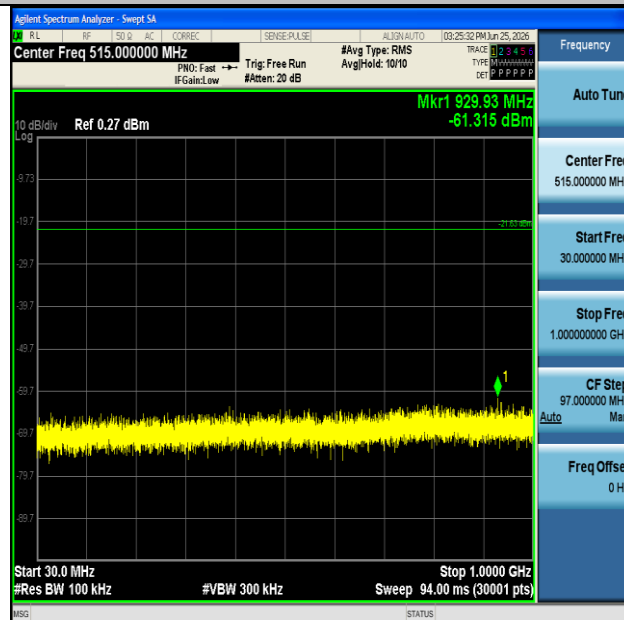


BLE_1M-Ant1-2440-1000~26500-PASS



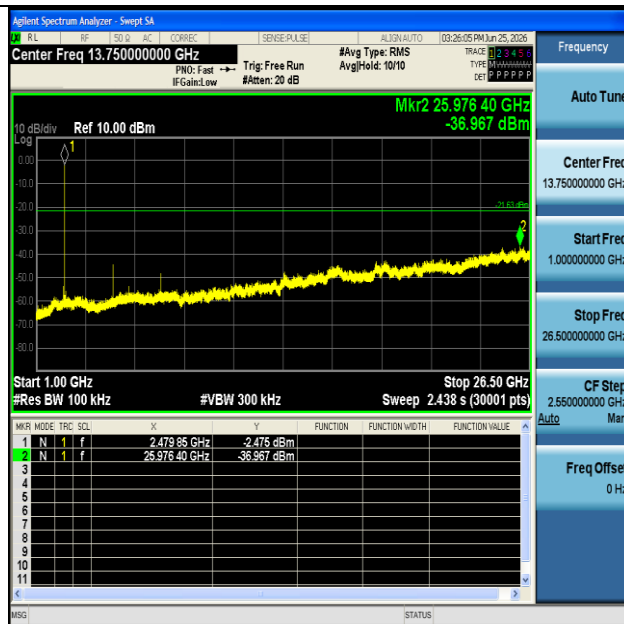


BLE_1M-Ant1-2480-0~Reference-PASS



BLE_1M-Ant1-2480-30~1000-PASS





BLE_1M-Ant1-2480-1000~26500-PASS





Appendix G: Duty Cycle

Test Result

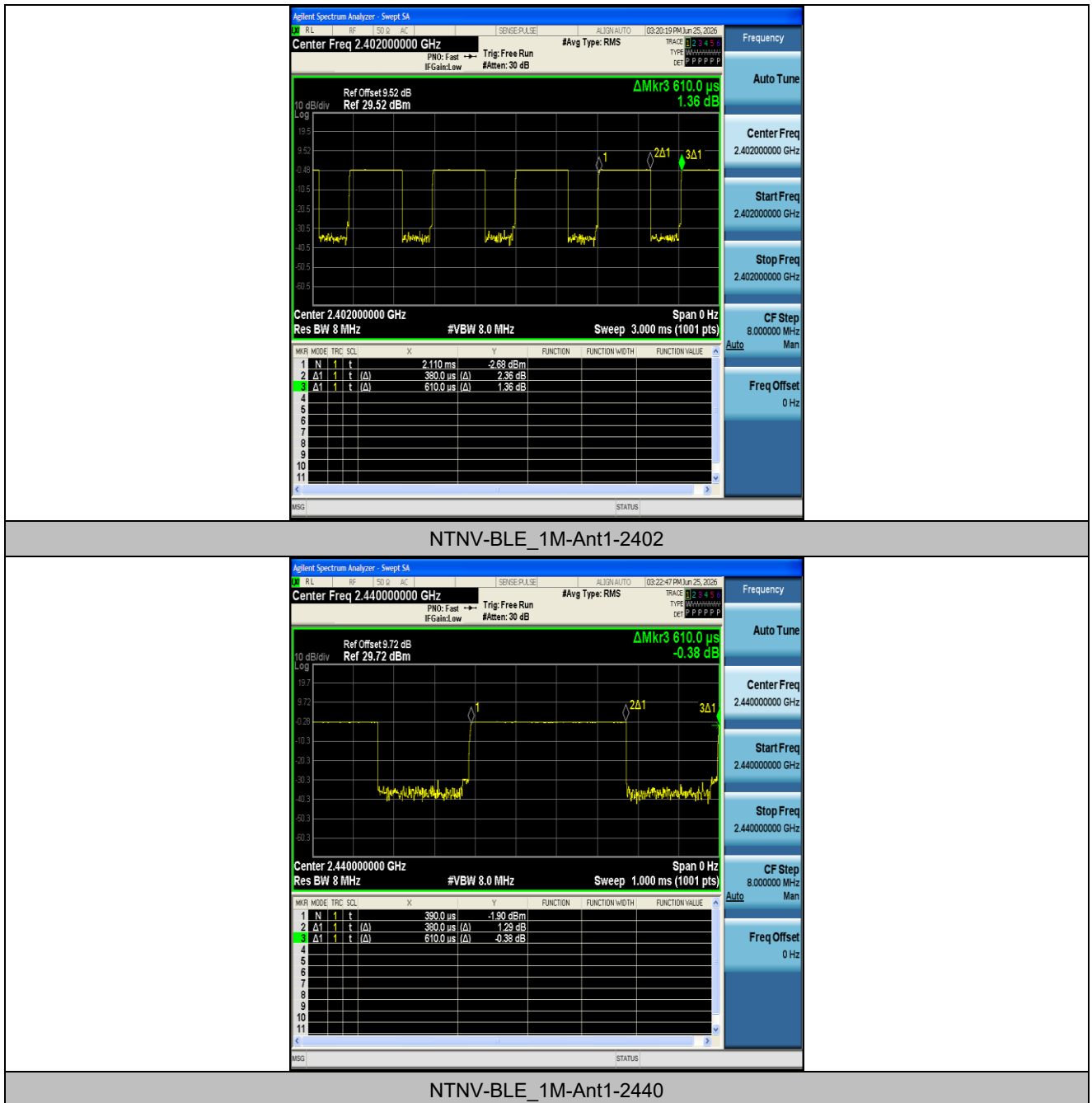
Test Mode	Antenna	Frequency [MHz]	ON Time [ms]	Period [ms]	Duty Cycle [%]	Duty Cycle Factor [dB]
BLE_1M	Ant1	2402	0.38	0.61	62.30	2.06
BLE_1M	Ant1	2440	0.38	0.61	62.30	2.06
BLE_1M	Ant1	2480	0.39	0.61	63.93	1.94

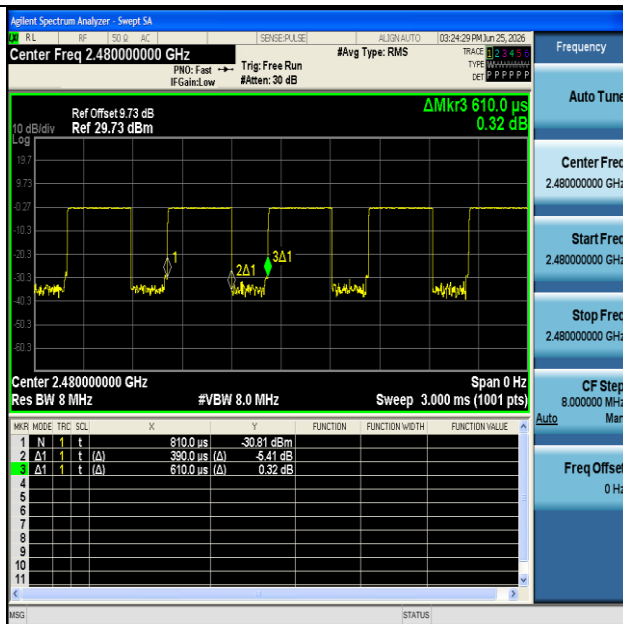
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)





Test Graphs





NTNV-BLE_1M-Ant1-2480

