



Appendix Test Data for BLE (Conducted Measurement)

Product Name: Smart Golf Sunglasses

Trade Mark: /

Test Model: Horizon

FCC ID: 2AEOGHOR

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	0.680	2401.684	2402.364	0.5	PASS
BLE_1M	Ant1	2440	0.652	2439.696	2440.348	0.5	PASS
BLE_1M	Ant1	2480	0.704	2479.680	2480.384	0.5	PASS
BLE_2M	Ant1	2404	0.980	2403.448	2404.428	0.5	PASS
BLE_2M	Ant1	2440	0.968	2439.456	2440.424	0.5	PASS
BLE_2M	Ant1	2478	0.936	2477.472	2478.408	0.5	PASS

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





Test Graphs





BLE_1M-Ant1-2480-PASS



BLE_2M-Ant1-2404-PASS





BLE_2M-Ant1-2440-PASS



BLE_2M-Ant1-2478-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	1.0641	2401.4915	2402.5556	---	---
BLE_1M	Ant1	2440	1.0646	2439.4957	2440.5603	---	---
BLE_1M	Ant1	2480	1.0447	2479.5023	2480.5470	---	---
BLE_2M	Ant1	2404	1.9997	2403.0308	2405.0305	---	---
BLE_2M	Ant1	2440	1.9043	2439.0742	2440.9785	---	---
BLE_2M	Ant1	2478	1.9431	2477.0501	2478.9932	---	---

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



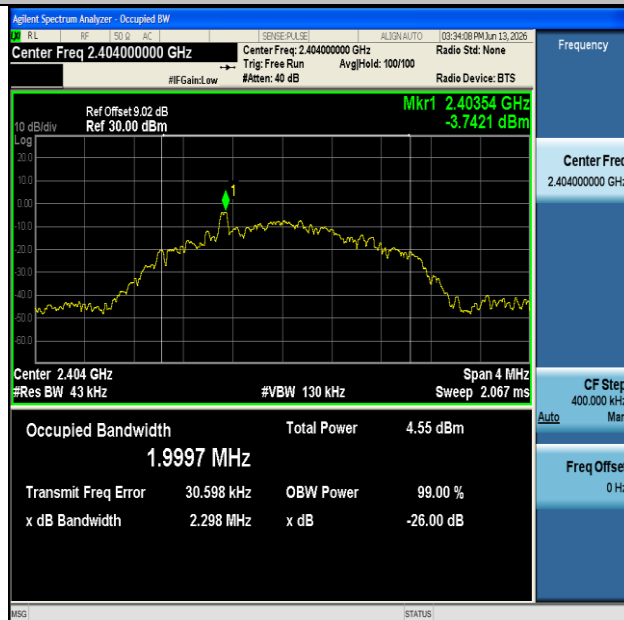


Test Graphs



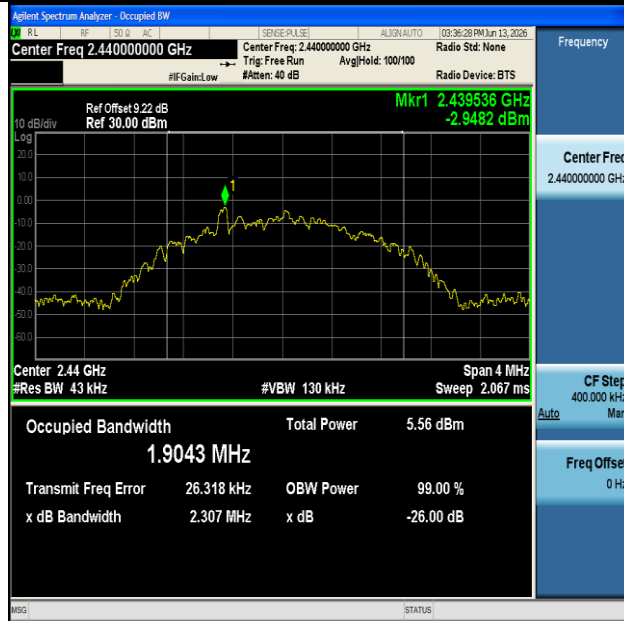


BLE_1M-Ant1-2480

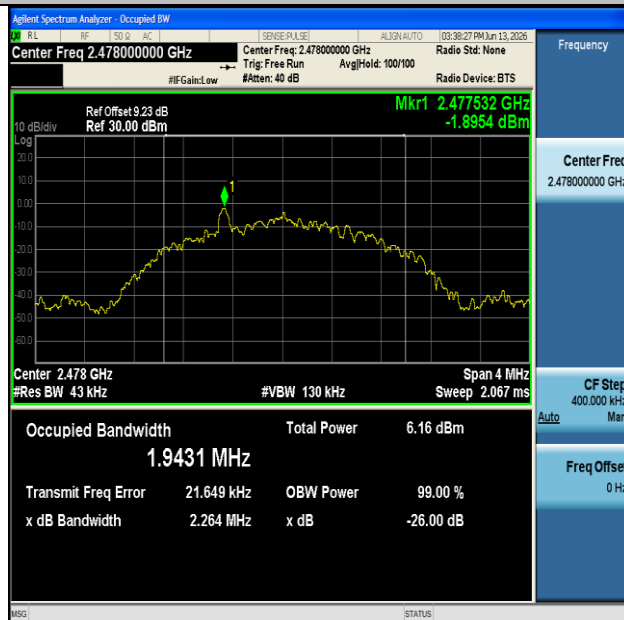


BLE_2M-Ant1-2404





BLE_2M-Ant1-2440



BLE_2M-Ant1-2478





Appendix C: Maximum peak conducted output power

Test Result Peak

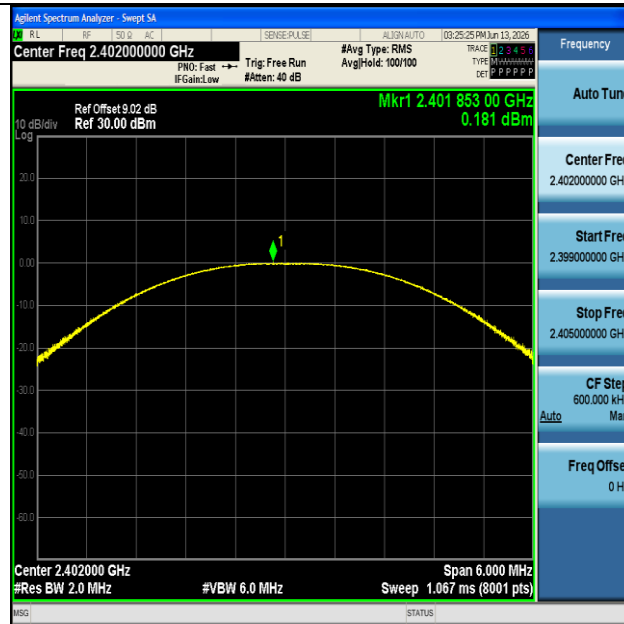
Test Mode	Antenna	Frequency [MHz]	Conducted Peak Power [dBm]	Conducted Limit [dBm]	Verdict
BLE_1M	Ant1	2402	0.18	≤30	PASS
BLE_1M	Ant1	2440	0.41	≤30	PASS
BLE_1M	Ant1	2480	0.63	≤30	PASS
BLE_2M	Ant1	2404	-0.23	≤30	PASS
BLE_2M	Ant1	2440	0.21	≤30	PASS
BLE_2M	Ant1	2478	0.91	≤30	PASS

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

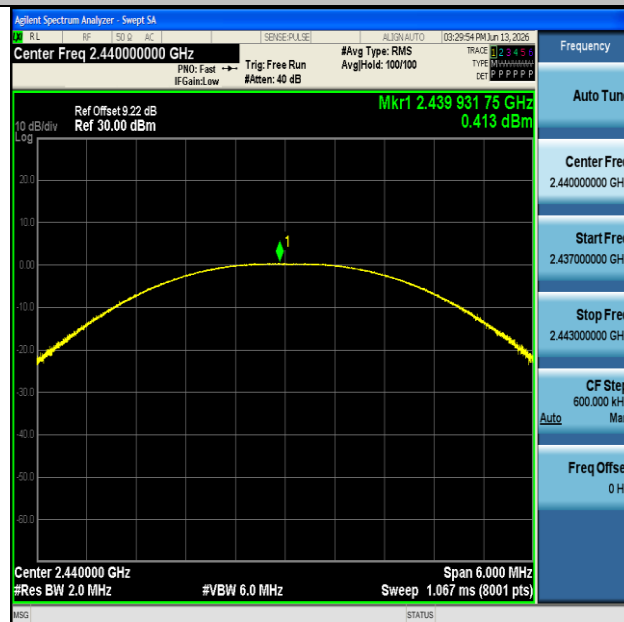




Test Graphs Peak

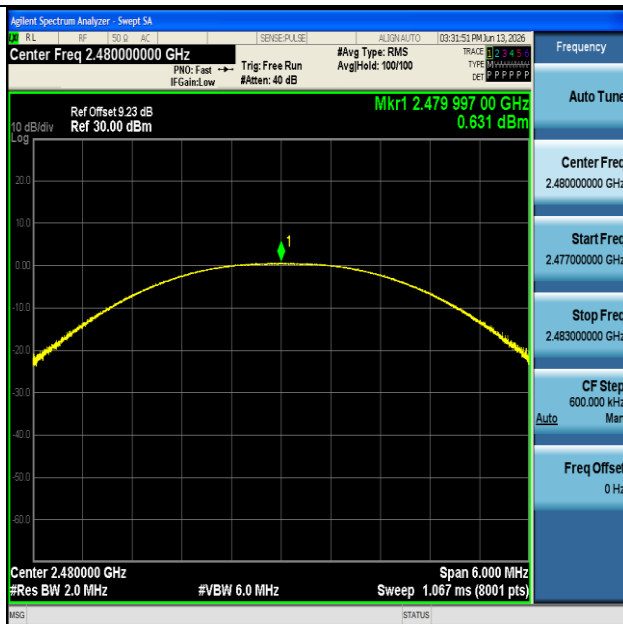


BLE_1M-Ant1-2402-PASS

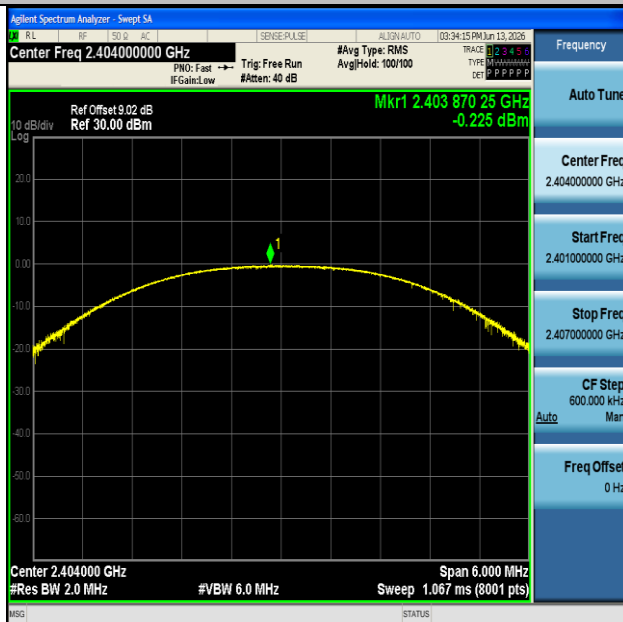


BLE_1M-Ant1-2440-PASS



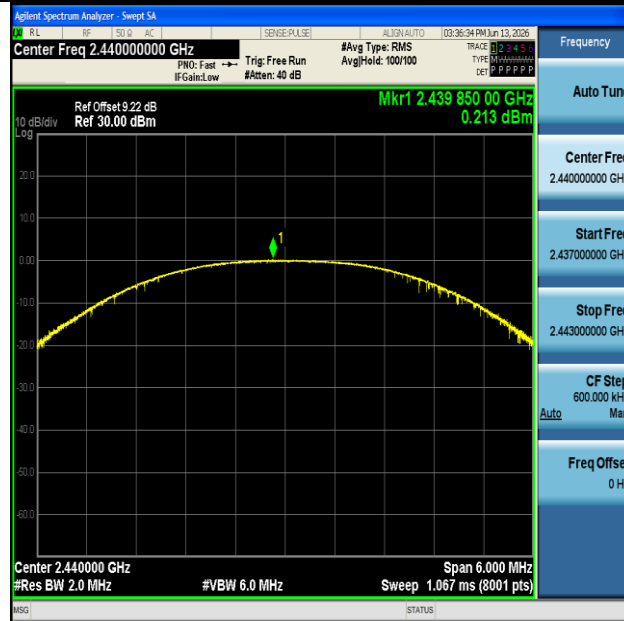


BLE_1M-Ant1-2480-PASS

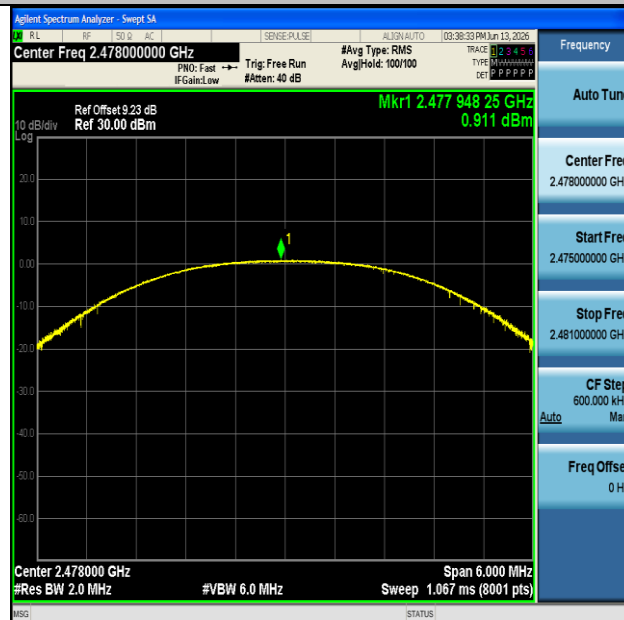


BLE_2M-Ant1-2404-PASS





BLE_2M-Ant1-2440-PASS



BLE_2M-Ant1-2478-PASS





Appendix D: Maximum peak power spectral density

Test Result

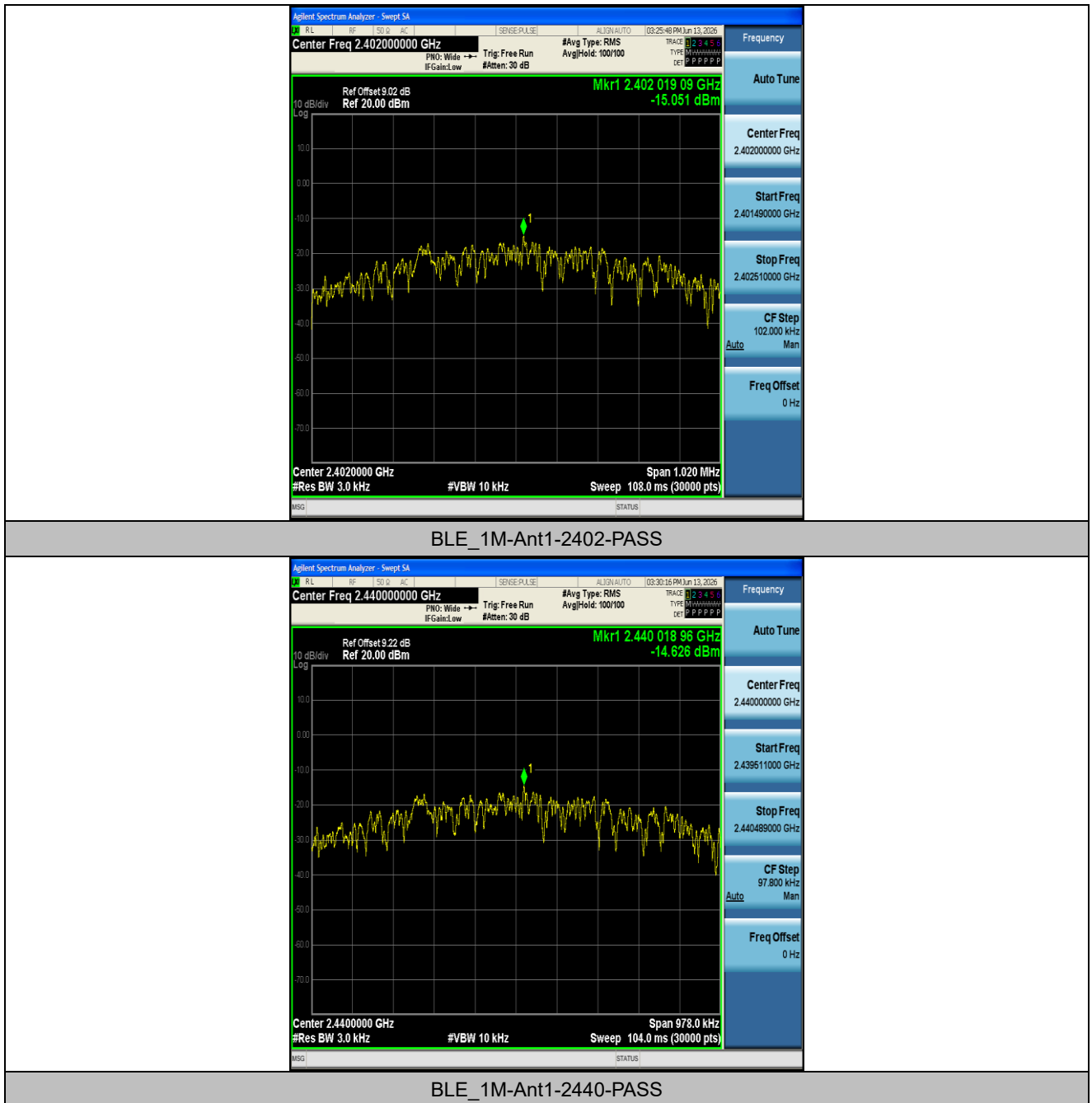
Test Mode	Antenna	Frequency [MHz]	Result [dBm/3kHz]	Limit [dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-15.05	≤8.00	PASS
BLE_1M	Ant1	2440	-14.63	≤8.00	PASS
BLE_1M	Ant1	2480	-14.56	≤8.00	PASS
BLE_2M	Ant1	2404	-17.79	≤8.00	PASS
BLE_2M	Ant1	2440	-17.42	≤8.00	PASS
BLE_2M	Ant1	2478	-16.73	≤8.00	PASS

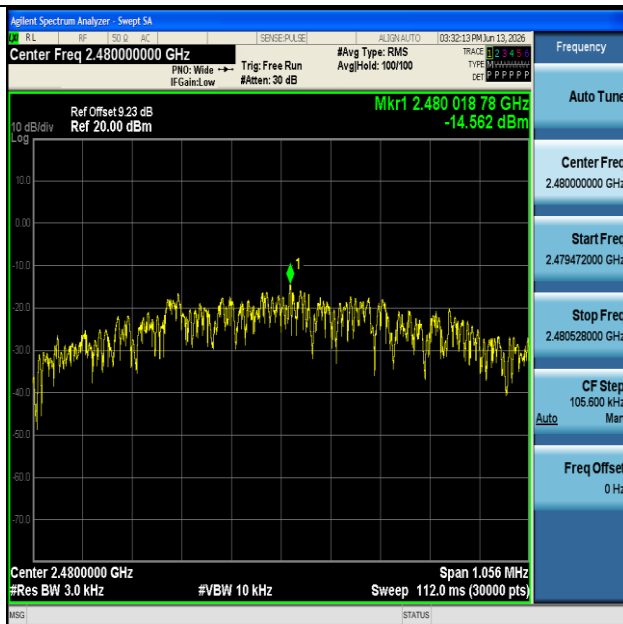
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)



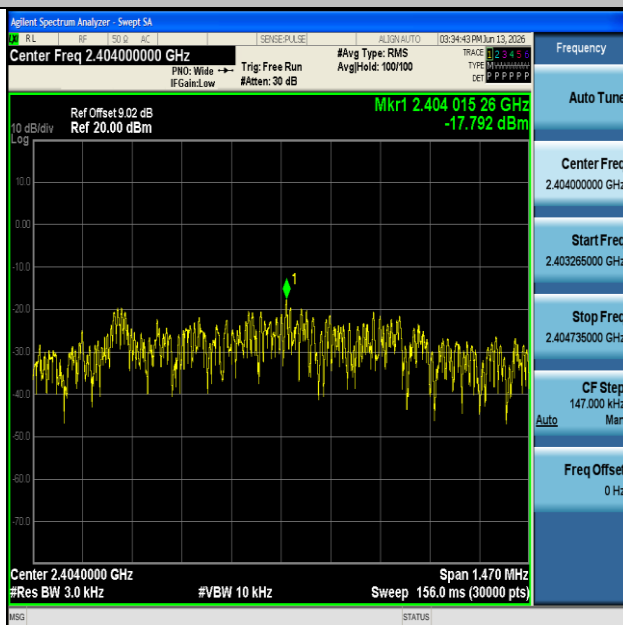


Test Graphs



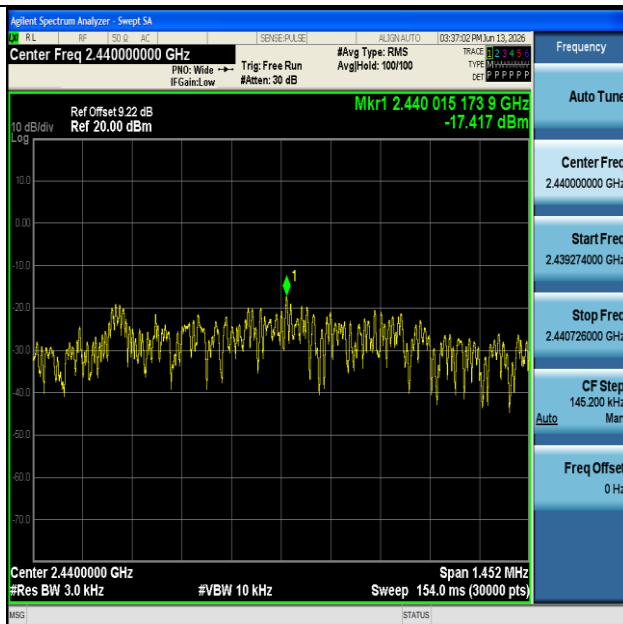


BLE_1M-Ant1-2480-PASS

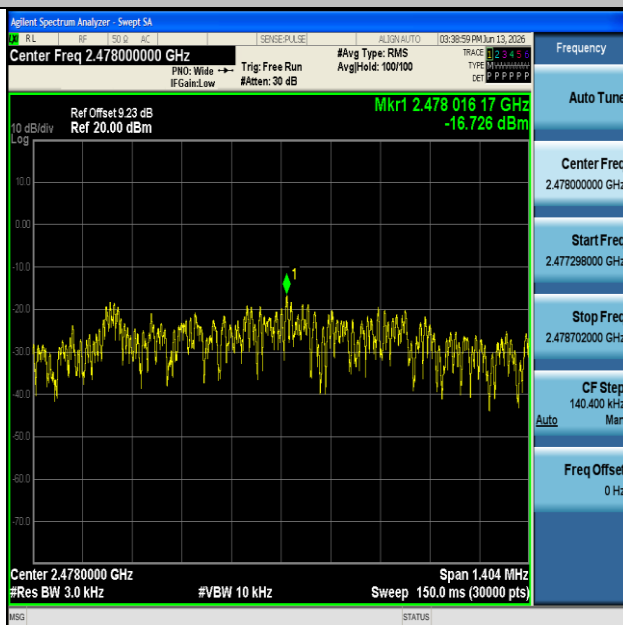


BLE_2M-Ant1-2404-PASS





BLE_2M-Ant1-2440-PASS



BLE_2M-Ant1-2478-PASS





Appendix E: Band edge measurements

Test Result

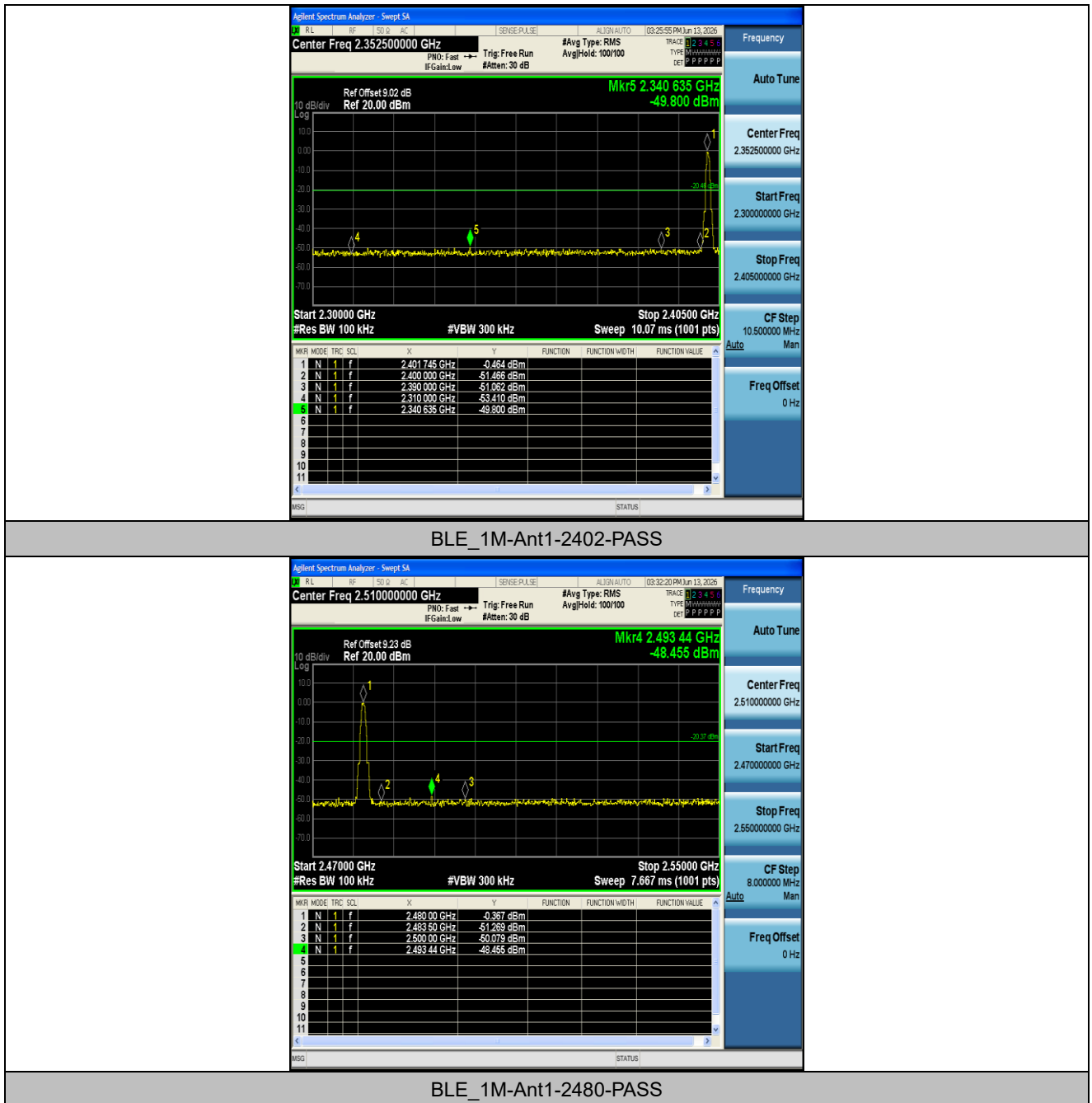
Test Mode	Antenna	Ch. Name	Frequency [MHz]	Ref. Level [dBm]	Result [dBm]	Limit [dBm]	Verdict
BLE_1M	Ant1	Low	2402	-0.46	-49.8	≤ -20.46	PASS
BLE_1M	Ant1	High	2480	-0.37	-48.46	≤ -20.37	PASS
BLE_2M	Ant1	Low	2404	-1.39	-49.75	≤ -21.39	PASS
BLE_2M	Ant1	High	2478	-0.06	-49.18	≤ -20.06	PASS

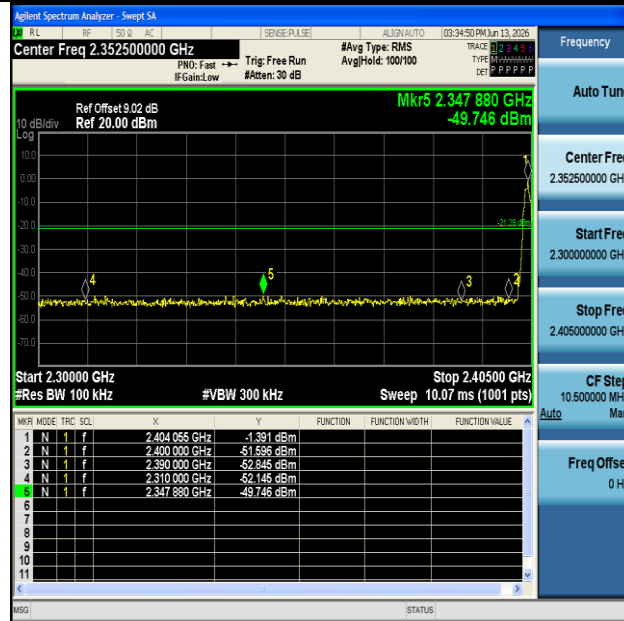
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)



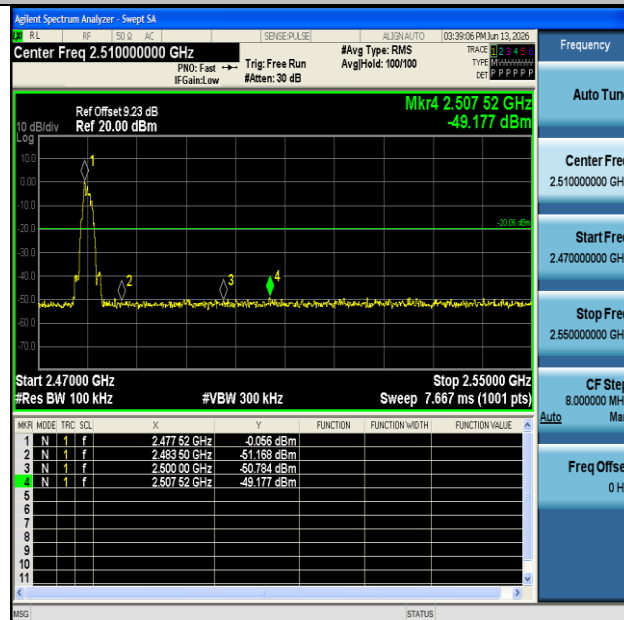


Test Graphs





BLE_2M-Ant1-2404-PASS



BLE_2M-Ant1-2478-PASS





Appendix F: Conducted Spurious Emission

Test Result

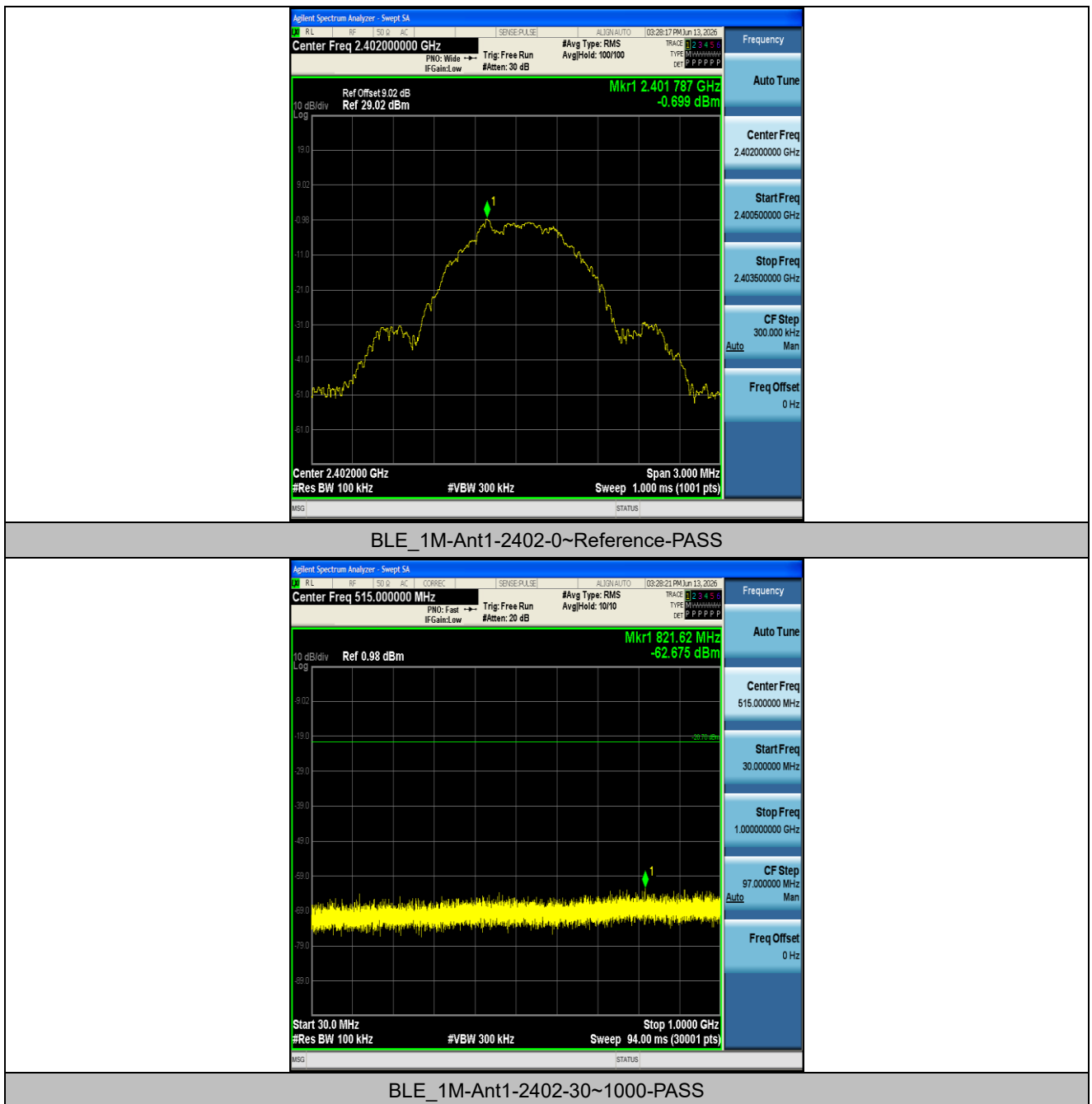
Test Mode	Antenna	Frequency [MHz]	Freq. Range [MHz]	Ref. Level [dBm]	Result [dBm]	Limit [dBm]	Verdict
BLE_1M	Ant1	2402	0~Reference	-0.70	-0.70	---	PASS
BLE_1M	Ant1	2402	30~1000	-0.70	-62.68	≤ -20.7	PASS
BLE_1M	Ant1	2402	1000~26500	-0.70	-37.38	≤ -20.7	PASS
BLE_1M	Ant1	2440	0~Reference	-0.37	-0.37	---	PASS
BLE_1M	Ant1	2440	30~1000	-0.37	-62.34	≤ -20.37	PASS
BLE_1M	Ant1	2440	1000~26500	-0.37	-37.15	≤ -20.37	PASS
BLE_1M	Ant1	2480	0~Reference	0.05	0.05	---	PASS
BLE_1M	Ant1	2480	30~1000	0.05	-62.64	≤ -19.95	PASS
BLE_1M	Ant1	2480	1000~26500	0.05	-37.93	≤ -19.95	PASS
BLE_2M	Ant1	2404	0~Reference	-1.53	-1.53	---	PASS
BLE_2M	Ant1	2404	30~1000	-1.53	-62.43	≤ -21.53	PASS
BLE_2M	Ant1	2404	1000~26500	-1.53	-37.35	≤ -21.53	PASS
BLE_2M	Ant1	2440	0~Reference	-0.90	-0.90	---	PASS
BLE_2M	Ant1	2440	30~1000	-0.90	-62.43	≤ -20.9	PASS
BLE_2M	Ant1	2440	1000~26500	-0.90	-37.24	≤ -20.9	PASS
BLE_2M	Ant1	2478	0~Reference	-0.15	-0.15	---	PASS
BLE_2M	Ant1	2478	30~1000	-0.15	-62.03	≤ -20.15	PASS
BLE_2M	Ant1	2478	1000~26500	-0.15	-37.15	≤ -20.15	PASS

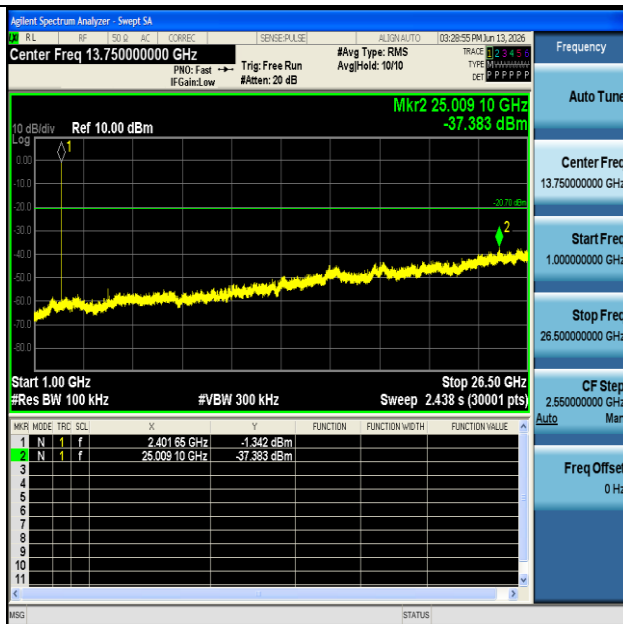
Note: offset(dB) in Reference test plots = cable loss(dB) + attenuator factor(dB); For spurious emissions plots from 30MHz to 26.5GHz, the cable loss and attenuator factors have been set in the 'Input Correction' of the Spectrum Analyzer during the test.



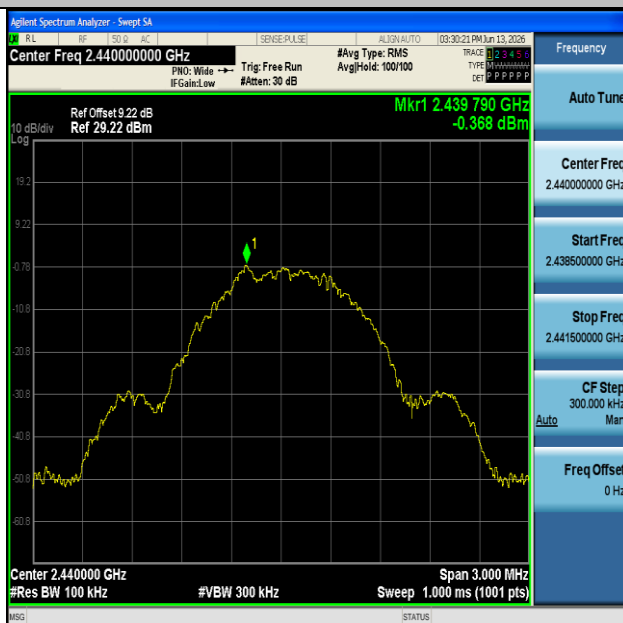


Test Graphs



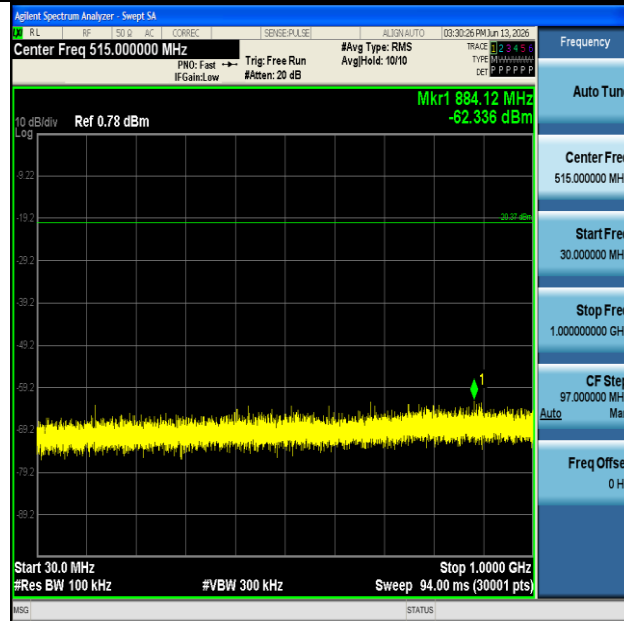


BLE_1M-Ant1-2402-1000~26500-PASS

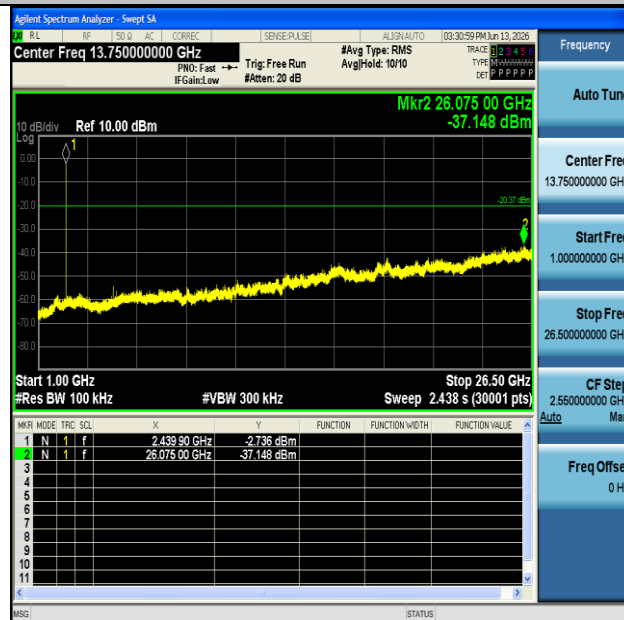


BLE_1M-Ant1-2440-0~Reference-PASS





BLE_1M-Ant1-2440-30~1000-PASS

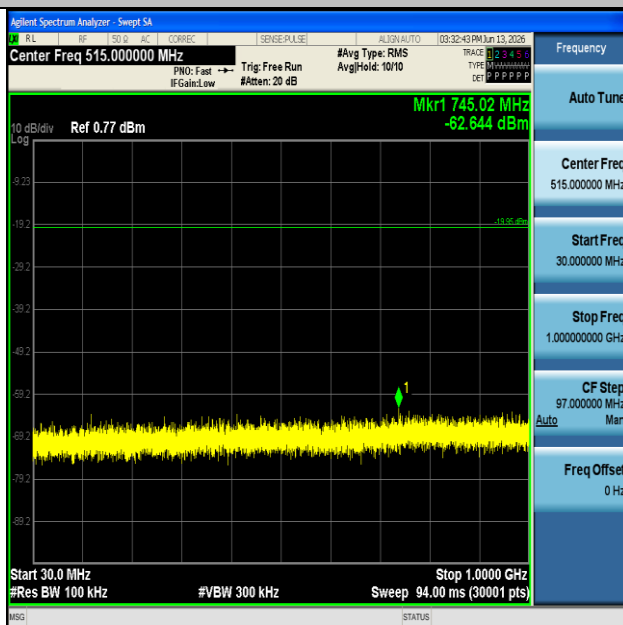


BLE_1M-Ant1-2440-1000~26500-PASS



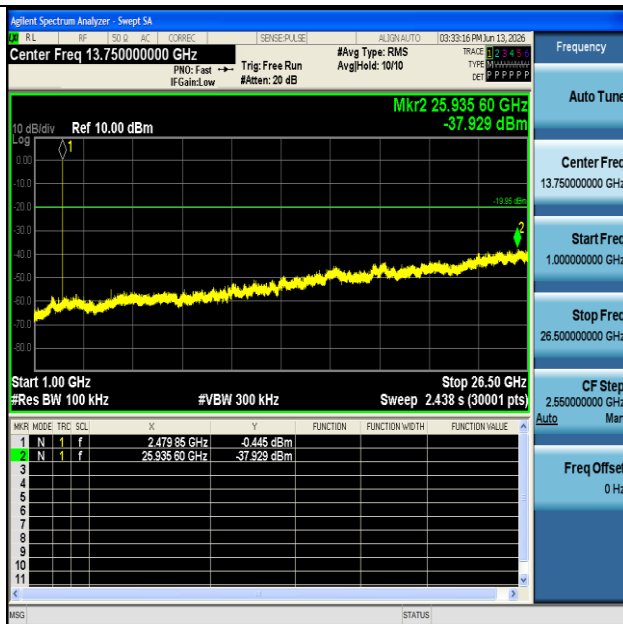


BLE_1M-Ant1-2480-0~Reference-PASS



BLE_1M-Ant1-2480-30~1000-PASS



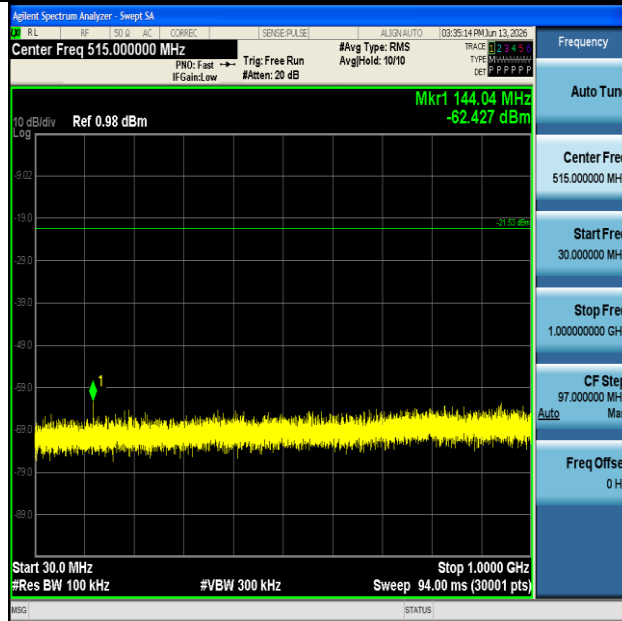


BLE_1M-Ant1-2480-1000~26500-PASS

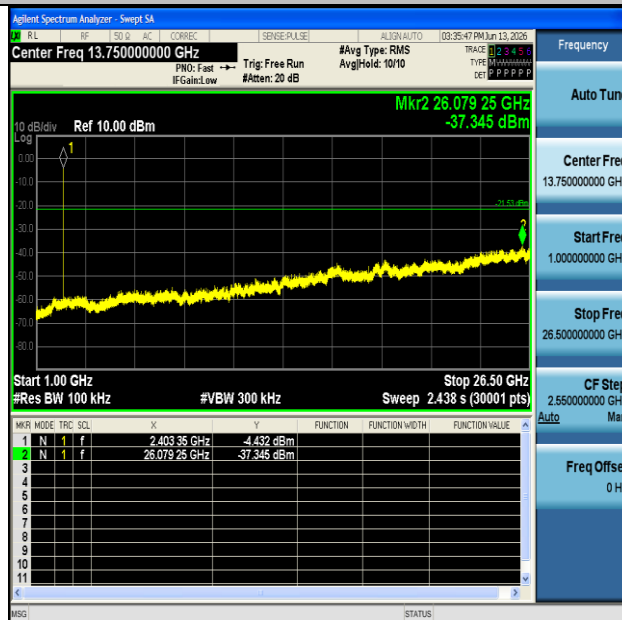


BLE_2M-Ant1-2404-0~Reference-PASS





BLE_2M-Ant1-2404-30~1000-PASS

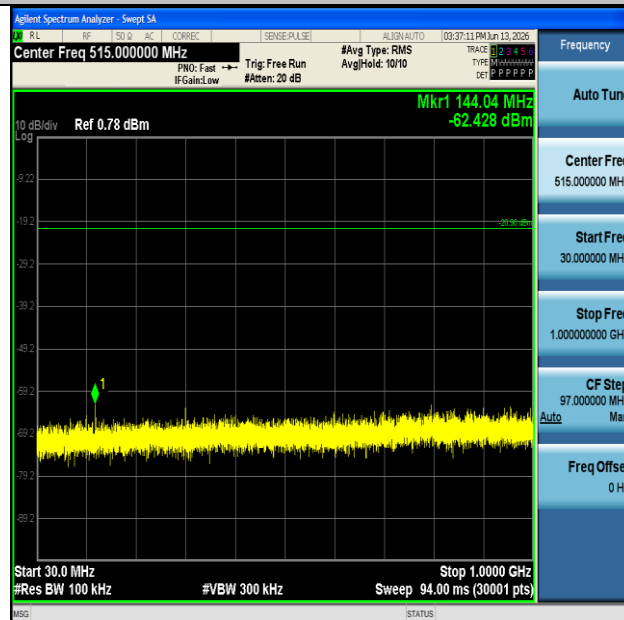


BLE_2M-Ant1-2404-1000~26500-PASS



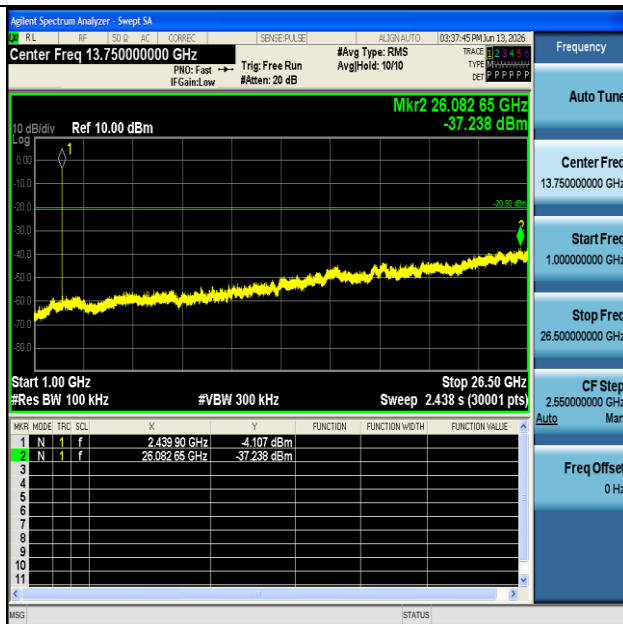


BLE_2M-Ant1-2440-0~Reference-PASS

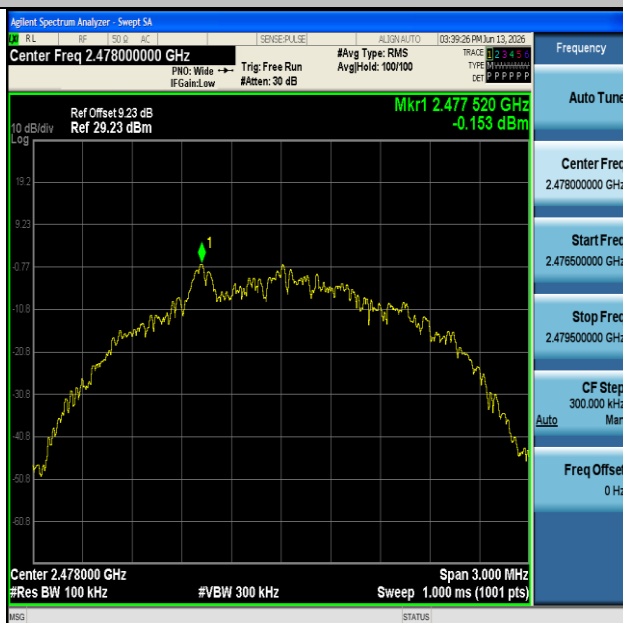


BLE_2M-Ant1-2440-30~1000-PASS



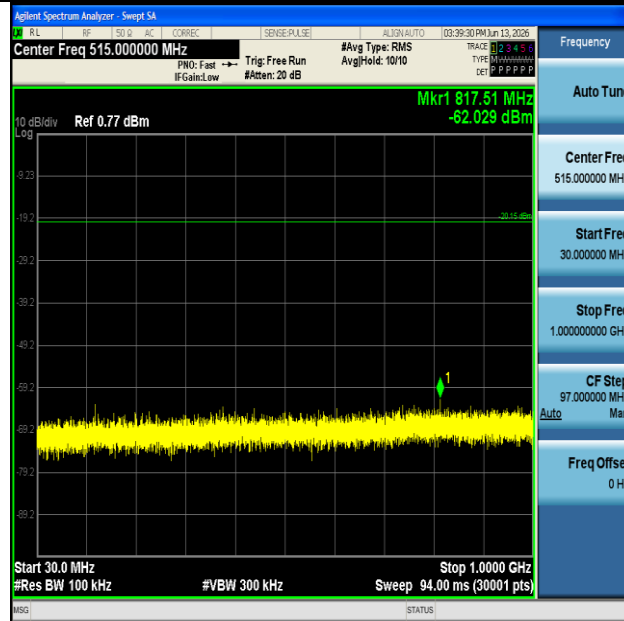


BLE_2M-Ant1-2440-1000~26500-PASS

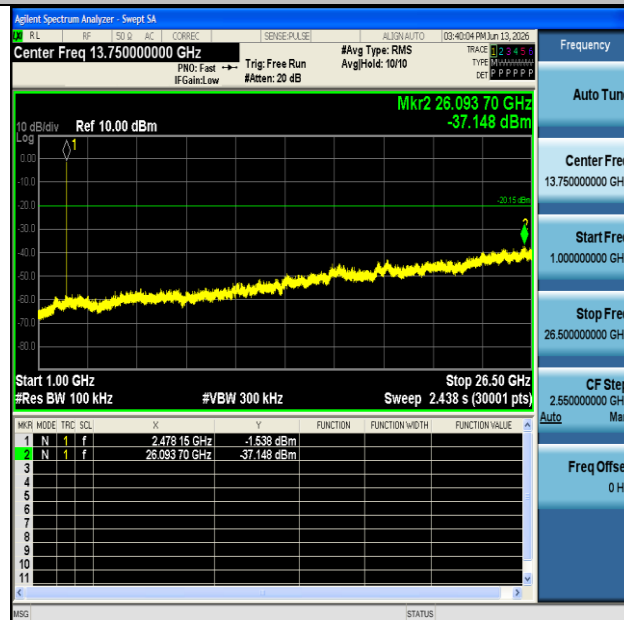


BLE_2M-Ant1-2478-0~Reference-PASS





BLE_2M-Ant1-2478-30~1000-PASS



BLE_2M-Ant1-2478-1000~26500-PASS





Appendix G: Duty Cycle

Test Result

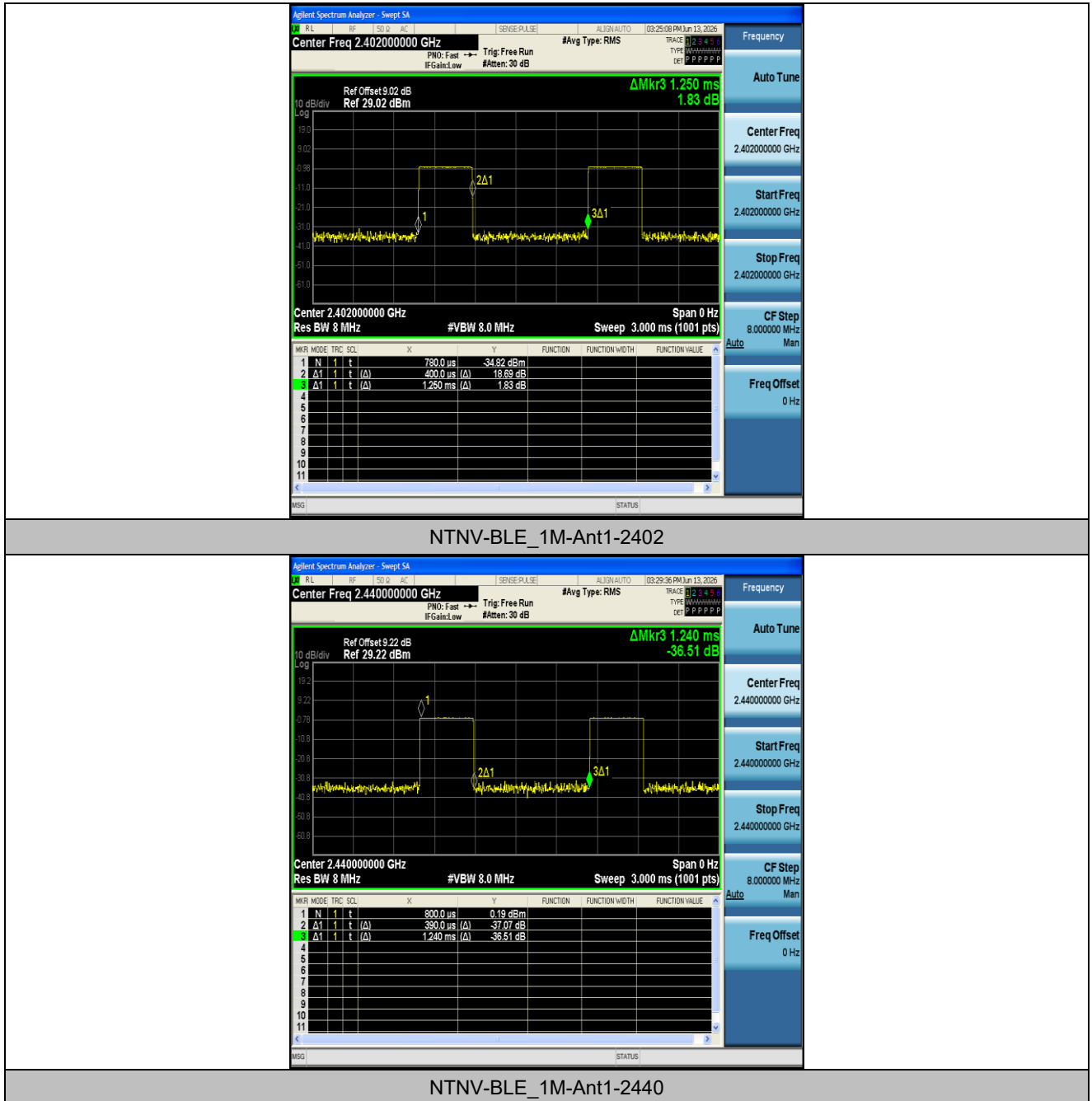
Test Mode	Antenna	Frequency [MHz]	ON Time [ms]	Period [ms]	Duty Cycle [%]	Duty Cycle Factor [dB]
BLE_1M	Ant1	2402	0.40	1.25	32.00	4.95
BLE_1M	Ant1	2440	0.39	1.24	31.45	5.02
BLE_1M	Ant1	2480	0.39	1.25	31.20	5.06
BLE_2M	Ant1	2404	0.21	1.25	16.80	7.75
BLE_2M	Ant1	2440	0.21	1.25	16.80	7.75
BLE_2M	Ant1	2478	0.21	1.25	16.80	7.75

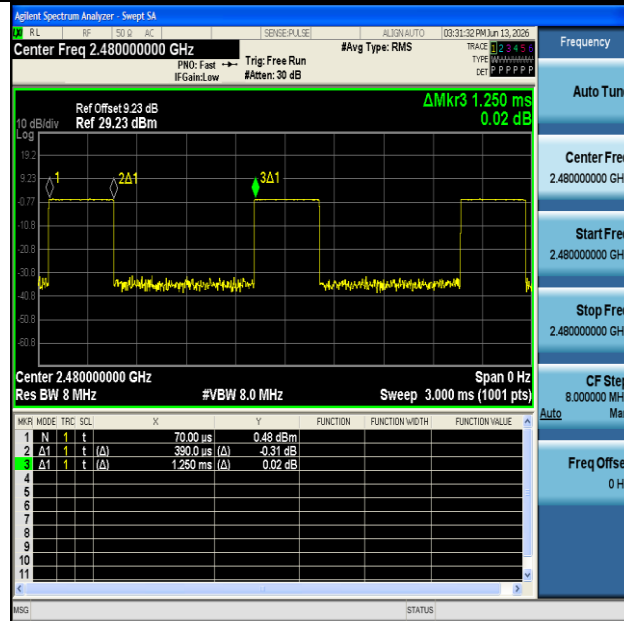
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)



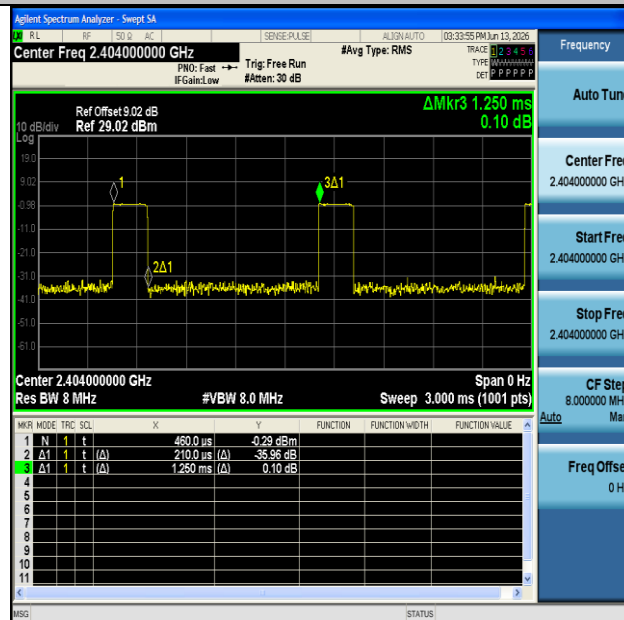


Test Graphs



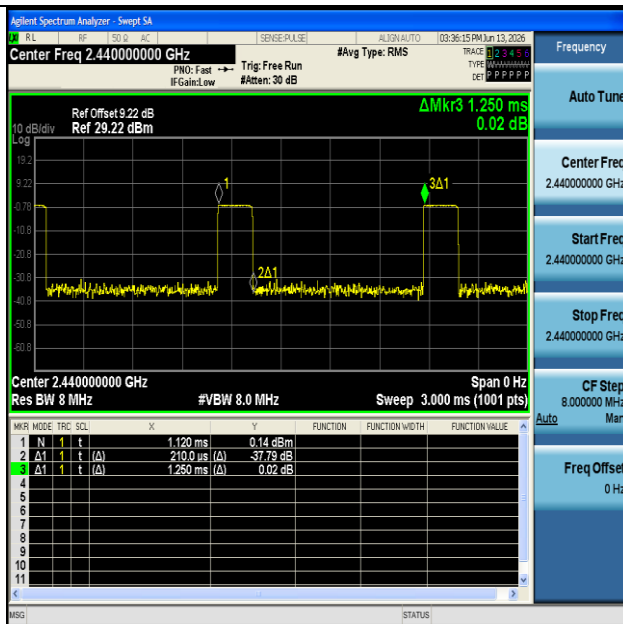


NTNV-BLE_1M-Ant1-2480

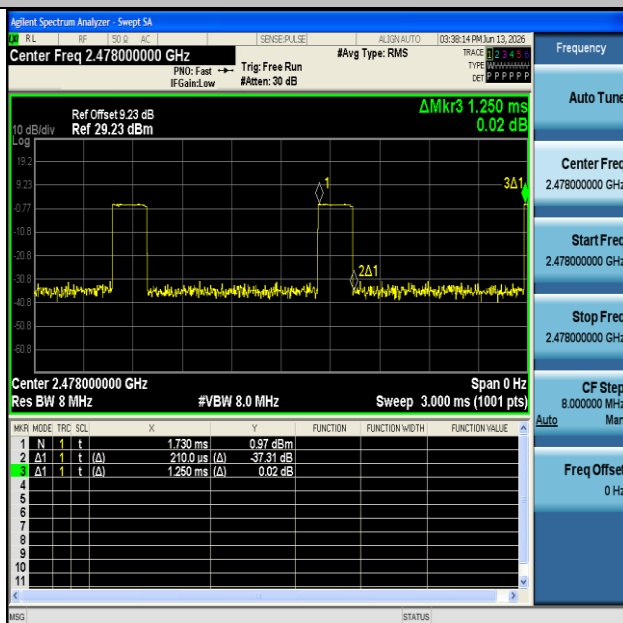


NTNV-BLE_2M-Ant1-2404





NTNV-BLE_2M-Ant1-2440



NTNV-BLE_2M-Ant1-2478

