

Appendix Test Data for BLE (Conducted Measurement)

Product Name: Smart Door Knob

Trade Mark: /

Test Model: 280X

FCC ID: 2BN2F-280X

Environmental Conditions

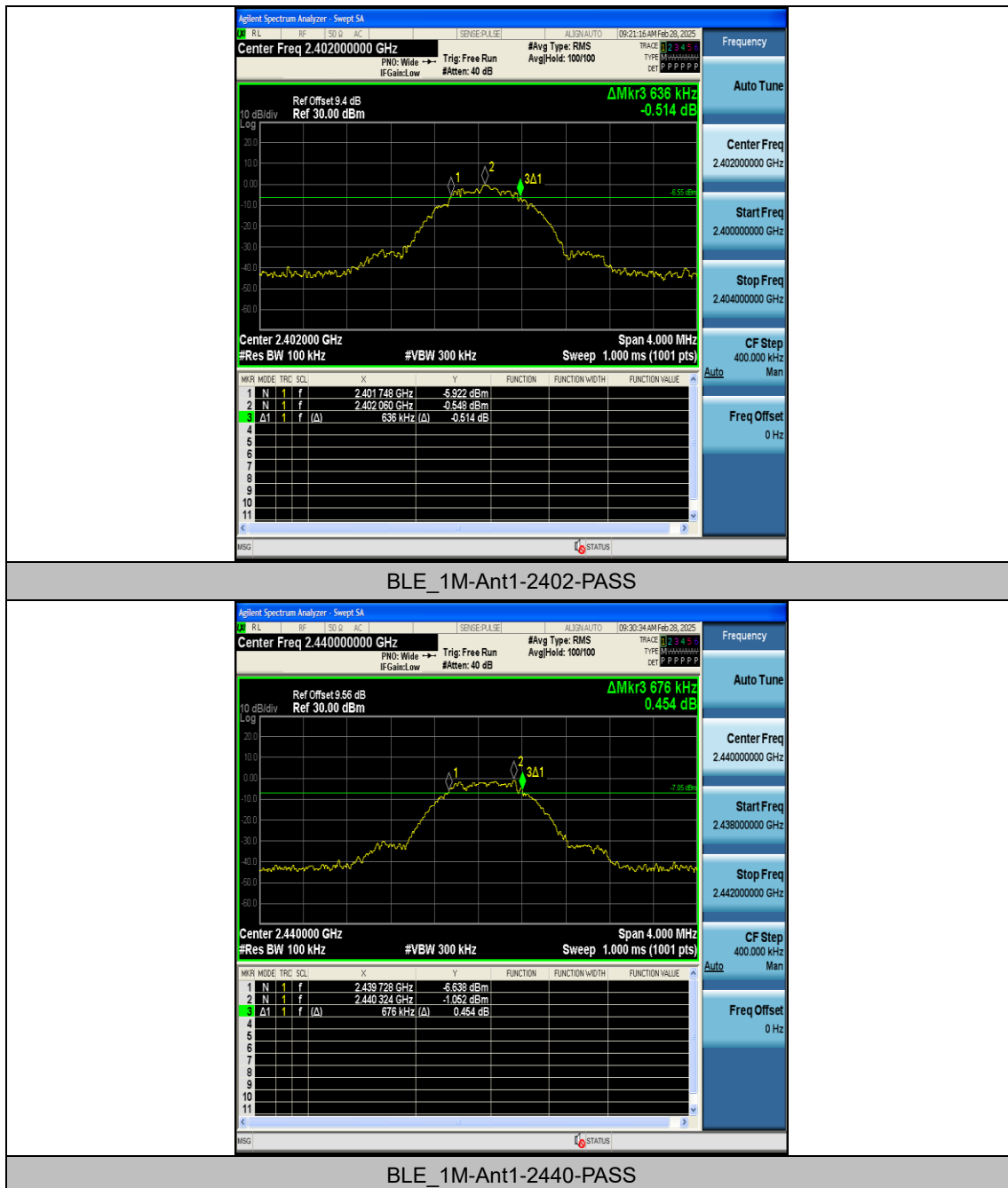
Temperature:	23.5℃
Relative Humidity:	58%
ATM Pressure:	100.0 kPa
Test Engineer:	Allen Lai
Supervised by:	Hugo Chen
NOTE	N/A

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	0.636	2401.748	2402.384	0.5	PASS
BLE_1M	Ant1	2440	0.676	2439.728	2440.404	0.5	PASS
BLE_1M	Ant1	2480	0.728	2479.716	2480.444	0.5	PASS

Test Graphs



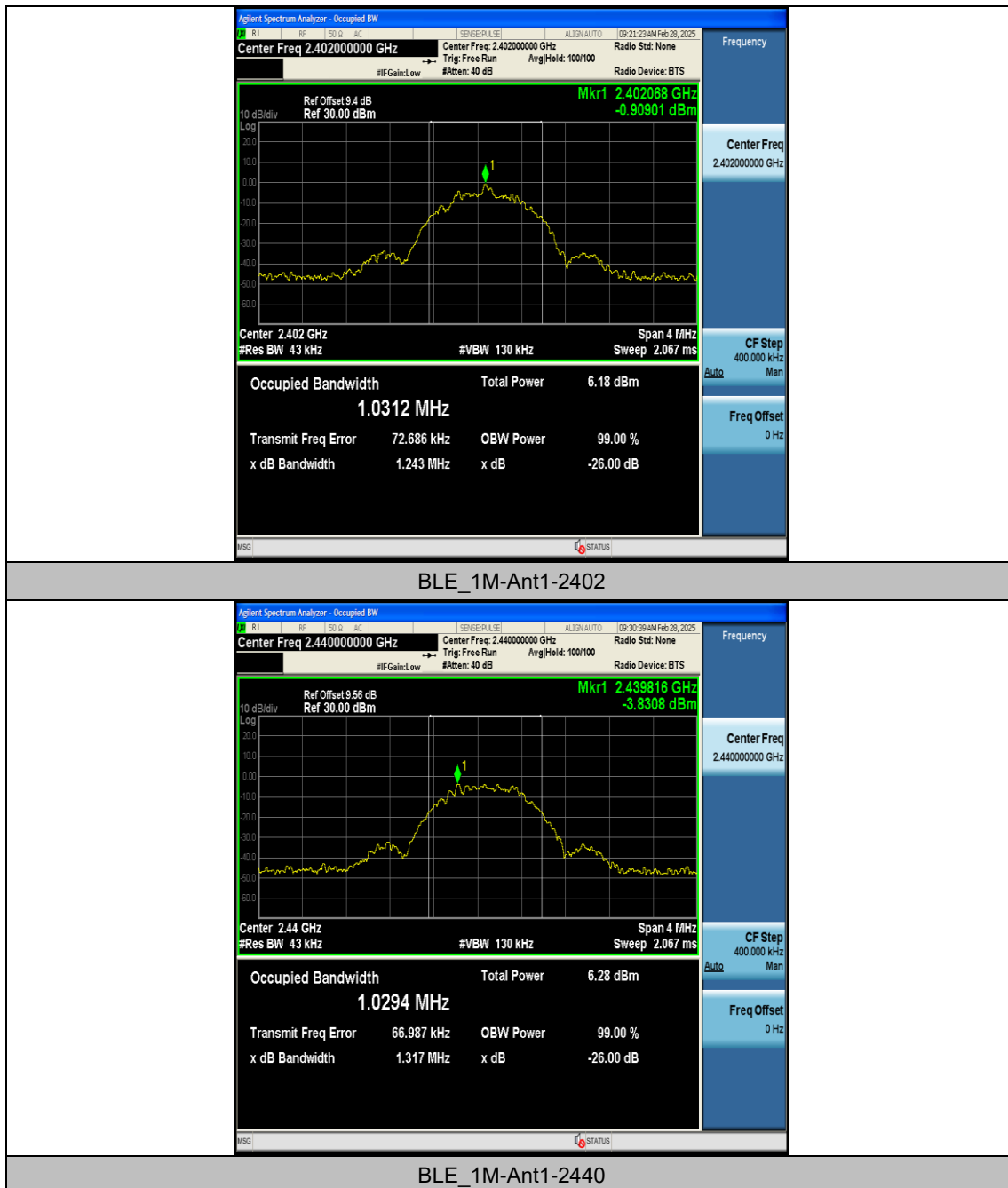


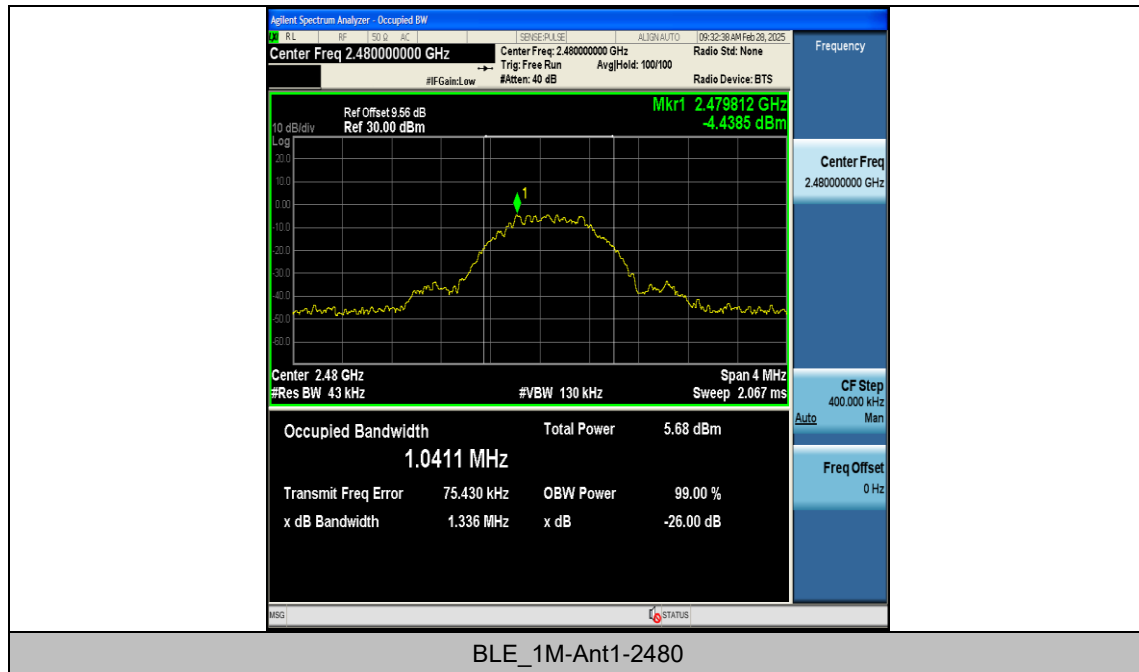
Appendix B: Occupied Channel Bandwidth

Test Result

Test Mode	Antenna	Frequency [MHz]	OCB [MHz]	FL [MHz]	FH [MHz]	Limit [MHz]	Verdict
BLE_1M	Ant1	2402	1.0312	2401.5571	2402.5883	---	---
BLE_1M	Ant1	2440	1.0294	2439.5523	2440.5817	---	---
BLE_1M	Ant1	2480	1.0411	2479.5549	2480.5960	---	---

Test Graphs



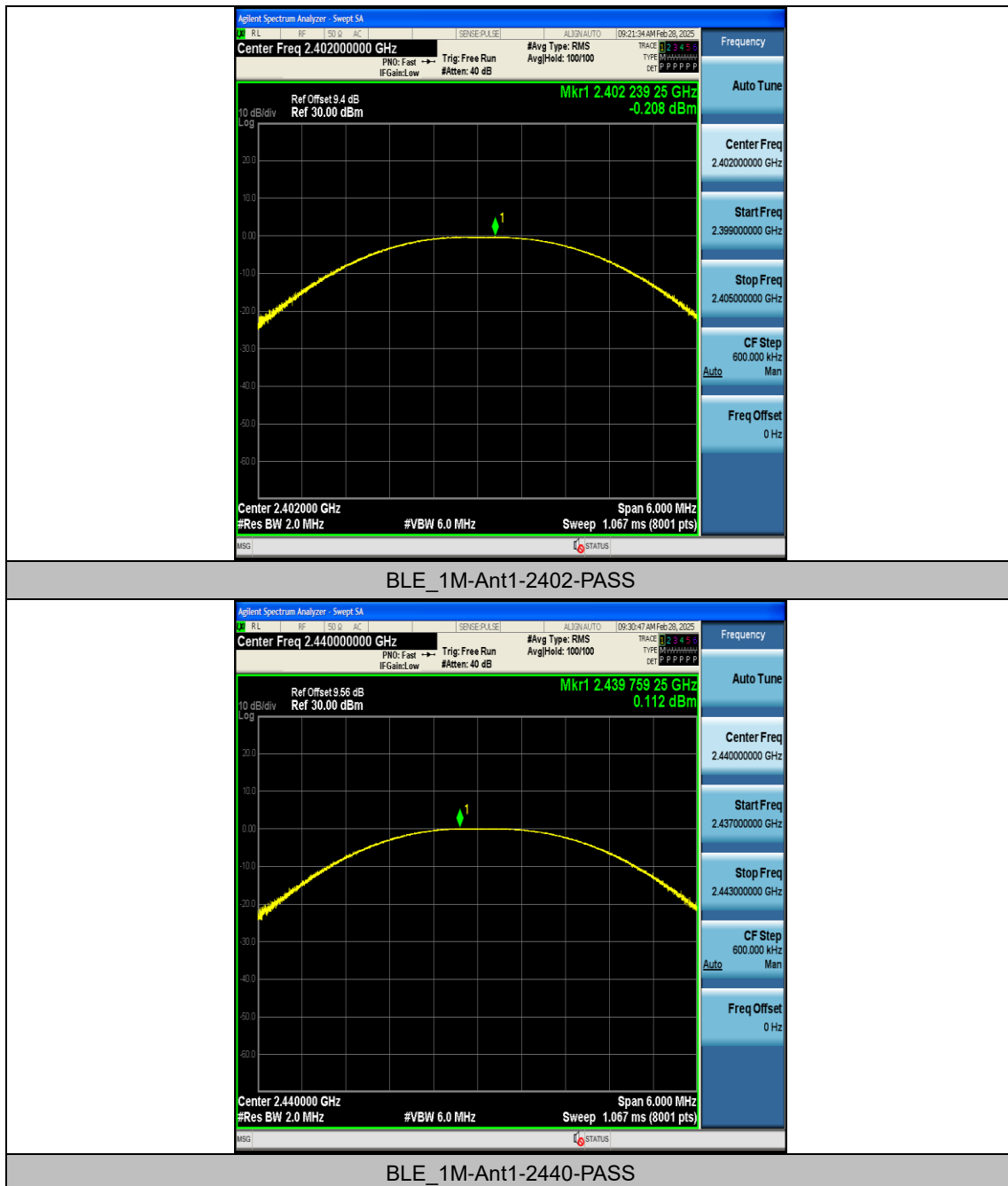


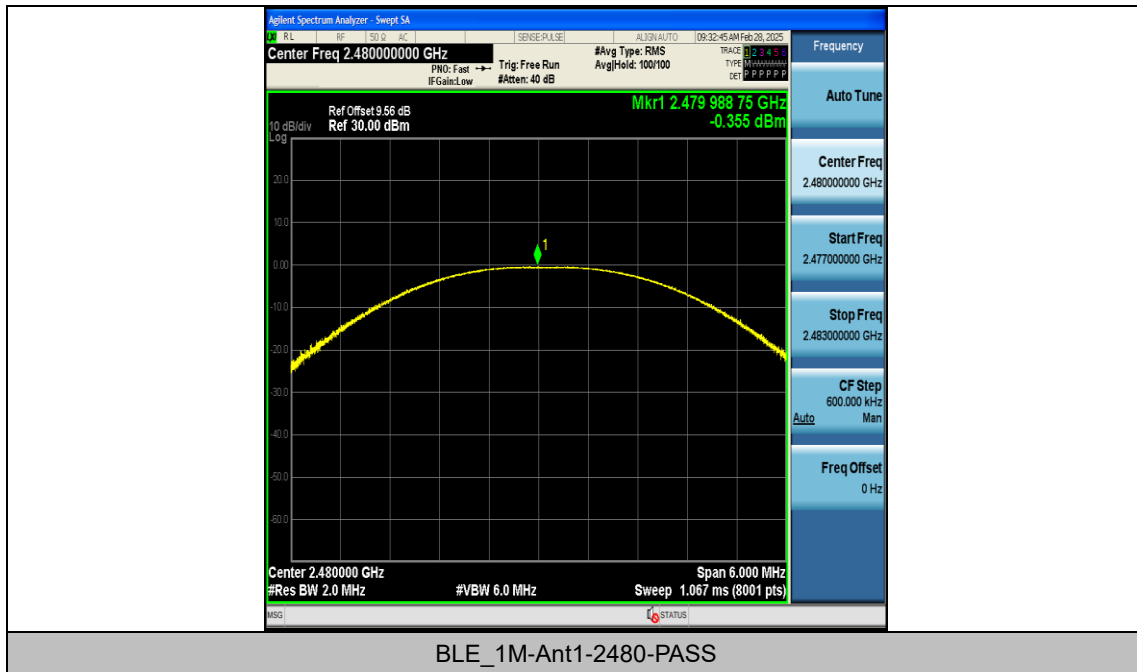
Appendix C: Maximum peak conducted output power

Test Result Peak

Test Mode	Antenna	Frequency [MHz]	Conducted Peak Power [dBm]	Conducted Limit [dBm]	Verdict
BLE_1M	Ant1	2402	-0.21	≤30	PASS
BLE_1M	Ant1	2440	0.11	≤30	PASS
BLE_1M	Ant1	2480	-0.36	≤30	PASS

Test Graphs Peak



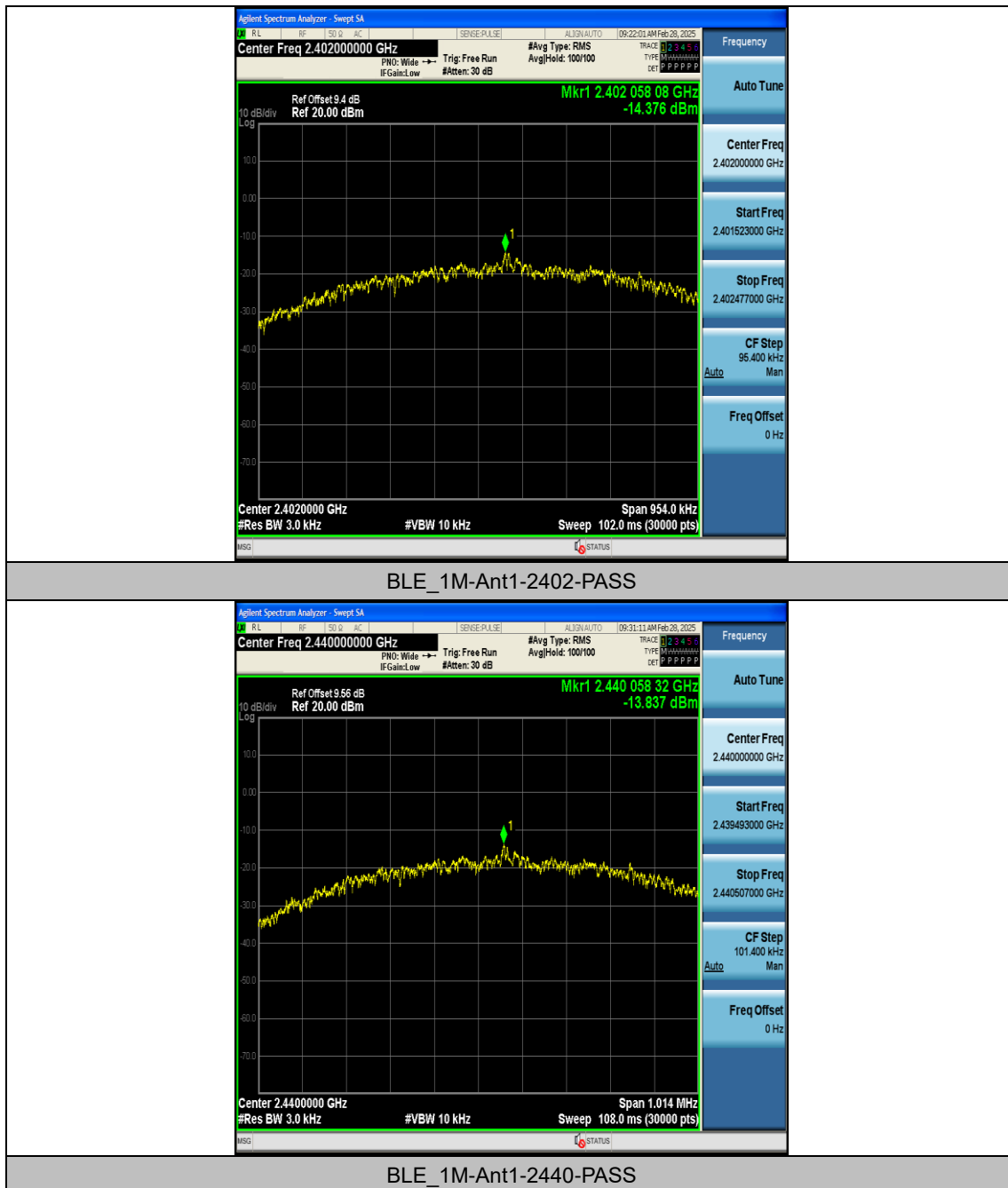


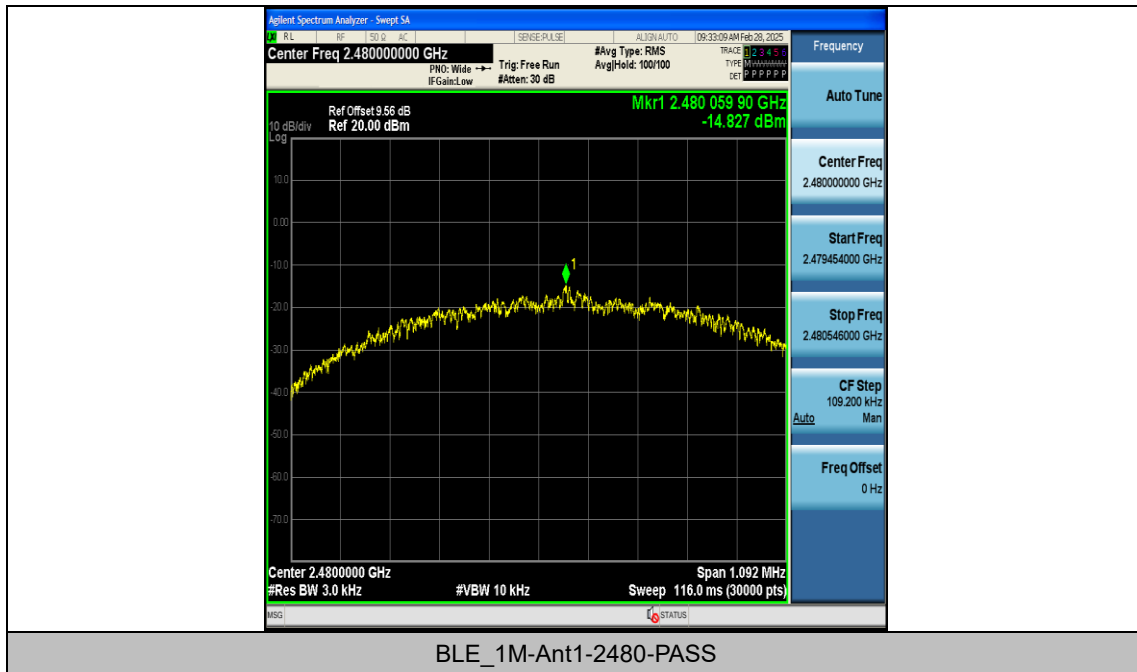
Appendix D: Maximum peak power spectral density

Test Result

Test Mode	Antenna	Frequency [MHz]	Result [dBm/3kHz]	Limit [dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-14.38	≤8.00	PASS
BLE_1M	Ant1	2440	-13.84	≤8.00	PASS
BLE_1M	Ant1	2480	-14.83	≤8.00	PASS

Test Graphs



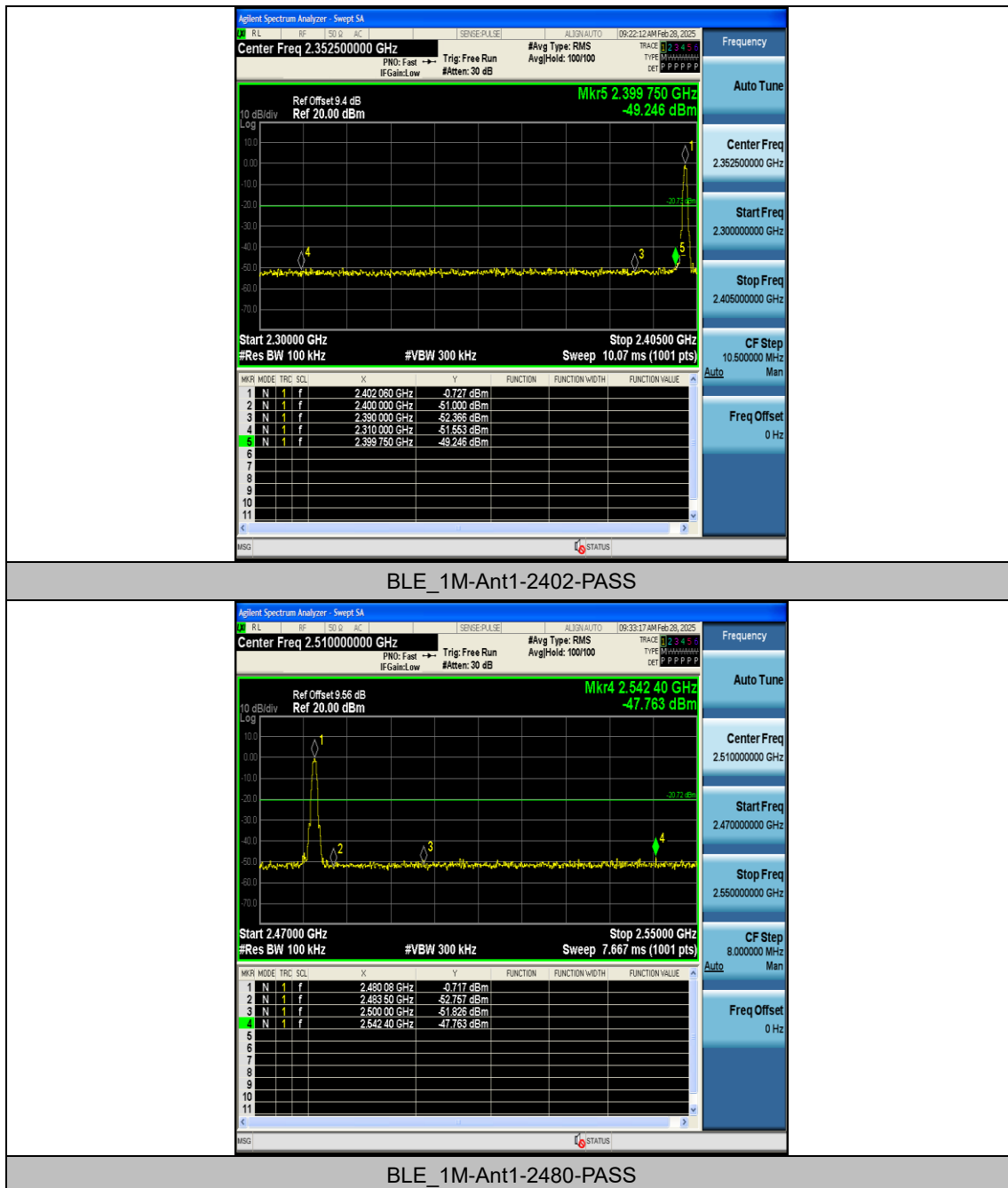


Appendix E: Band edge measurements

Test Result

Test Mode	Antenna	Ch. Name	Frequency [MHz]	Ref. Level [dBm]	Result [dBm]	Limit [dBm]	Verdict
BLE_1M	Ant1	Low	2402	-0.73	-49.25	≤ -20.73	PASS
BLE_1M	Ant1	High	2480	-0.72	-47.76	≤ -20.72	PASS

Test Graphs

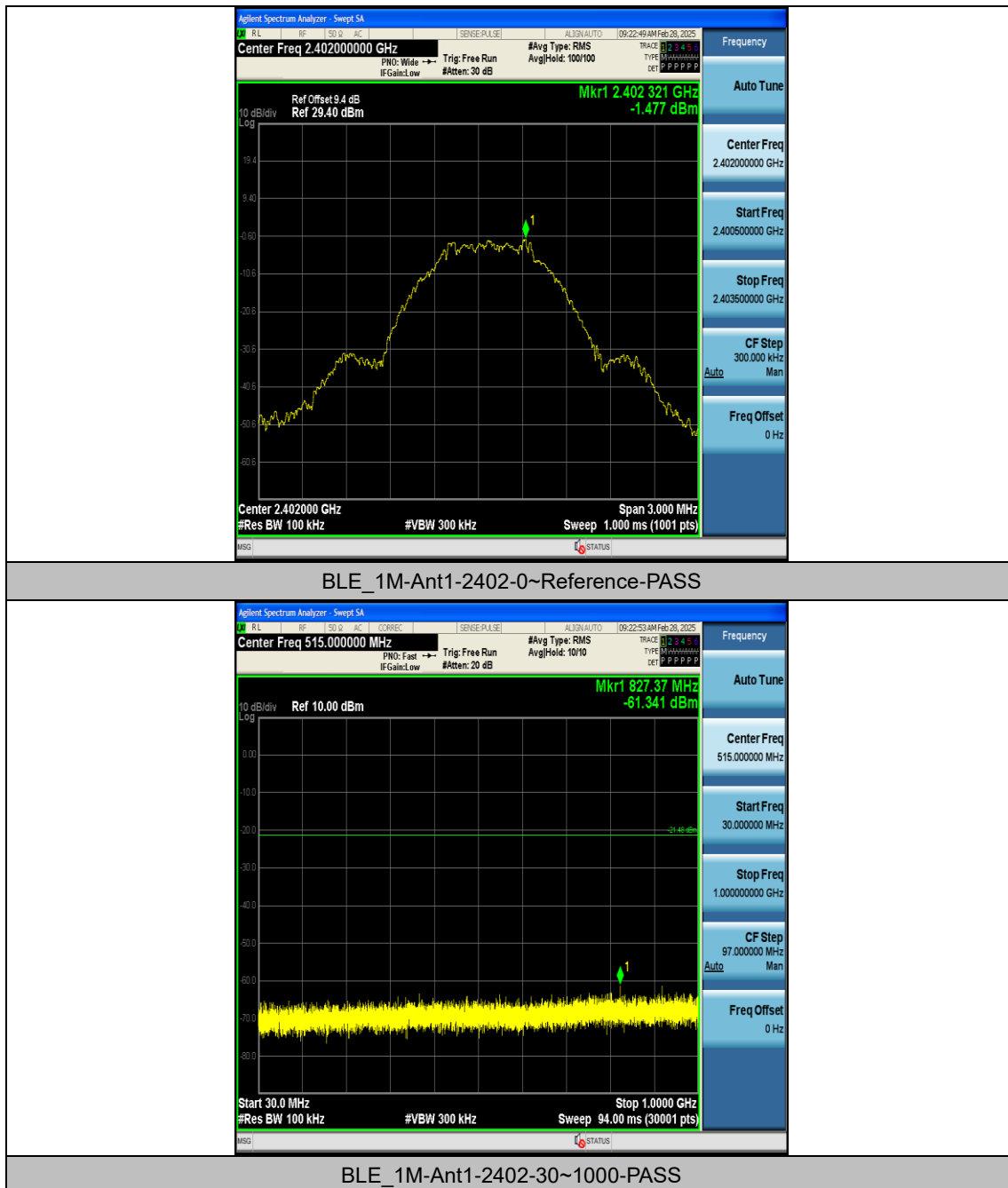


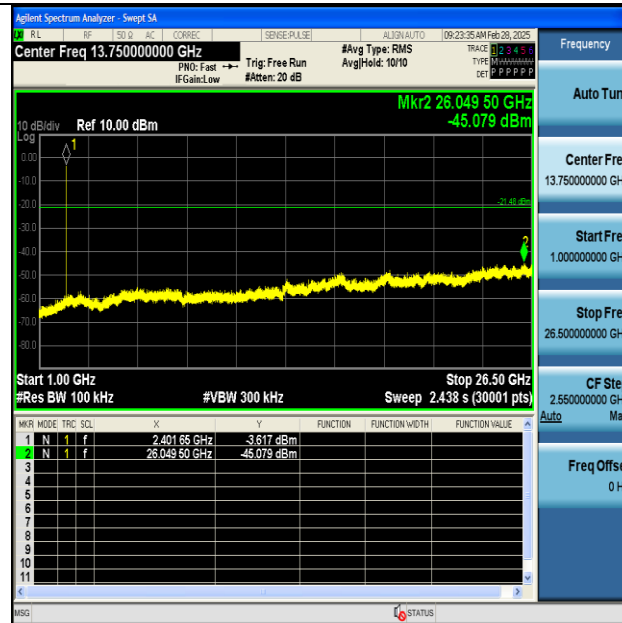
Appendix F: Conducted Spurious Emission

Test Result

Test Mode	Antenna	Frequency [MHz]	Freq. Range [MHz]	Ref. Level [dBm]	Result [dBm]	Limit [dBm]	Verdict
BLE_1M	Ant1	2402	0~Reference	-1.48	-1.48	---	PASS
BLE_1M	Ant1	2402	30~1000	-1.48	-61.34	≤-21.48	PASS
BLE_1M	Ant1	2402	1000~26500	-1.48	-45.08	≤-21.48	PASS
BLE_1M	Ant1	2440	0~Reference	-0.25	-0.25	---	PASS
BLE_1M	Ant1	2440	30~1000	-0.25	-62.09	≤-20.25	PASS
BLE_1M	Ant1	2440	1000~26500	-0.25	-44.99	≤-20.25	PASS
BLE_1M	Ant1	2480	0~Reference	-1.08	-1.08	---	PASS
BLE_1M	Ant1	2480	30~1000	-1.08	-61.98	≤-21.08	PASS
BLE_1M	Ant1	2480	1000~26500	-1.08	-44.5	≤-21.08	PASS

Test Graphs

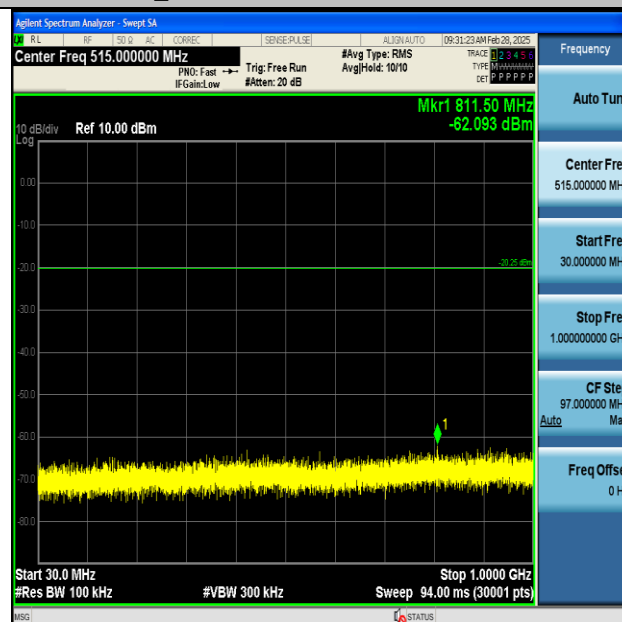




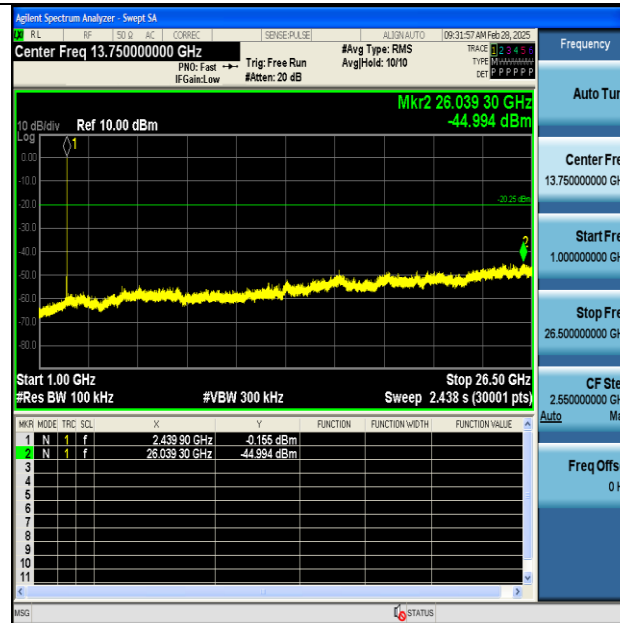
BLE_1M-Ant1-2402-1000~26500-PASS



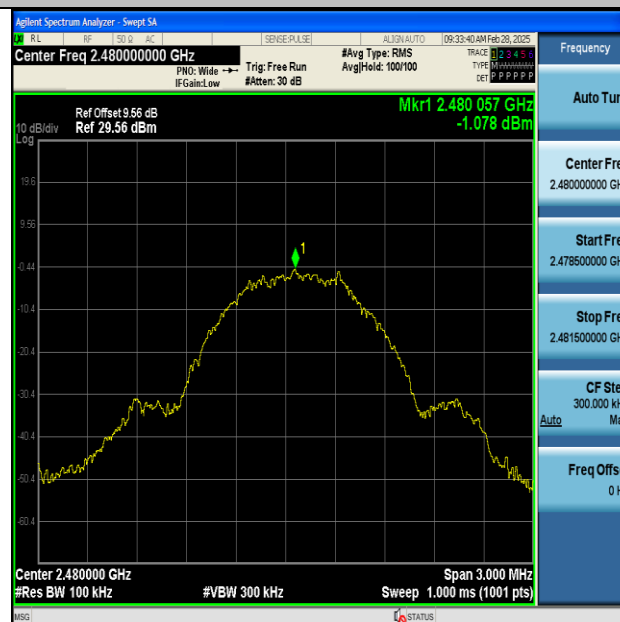
BLE_1M-Ant1-2440-0~Reference-PASS



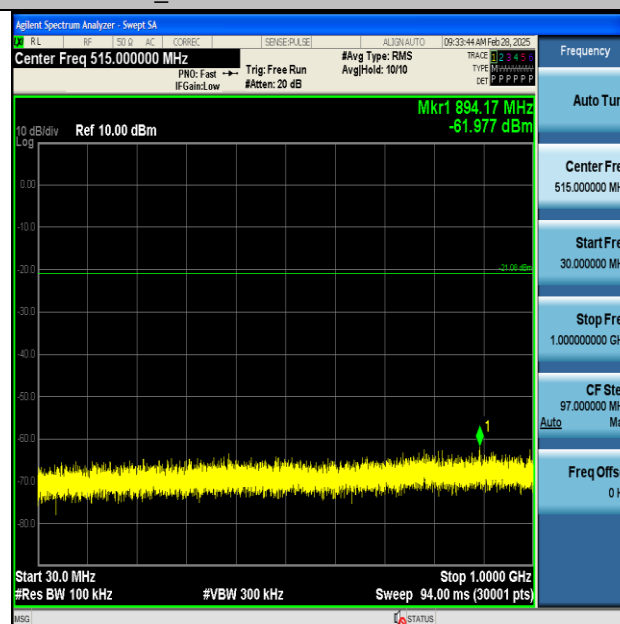
BLE_1M-Ant1-2440-30~1000-PASS



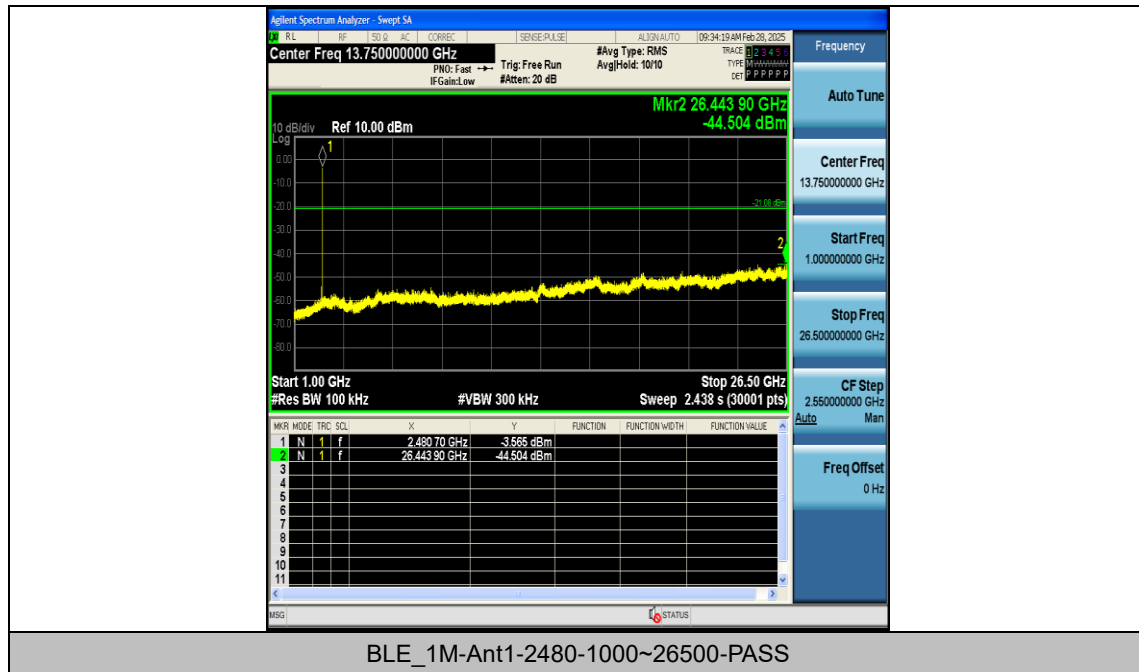
BLE_1M-Ant1-2440-1000~26500-PASS



BLE_1M-Ant1-2480-0~Reference-PASS



BLE_1M-Ant1-2480-30~1000-PASS

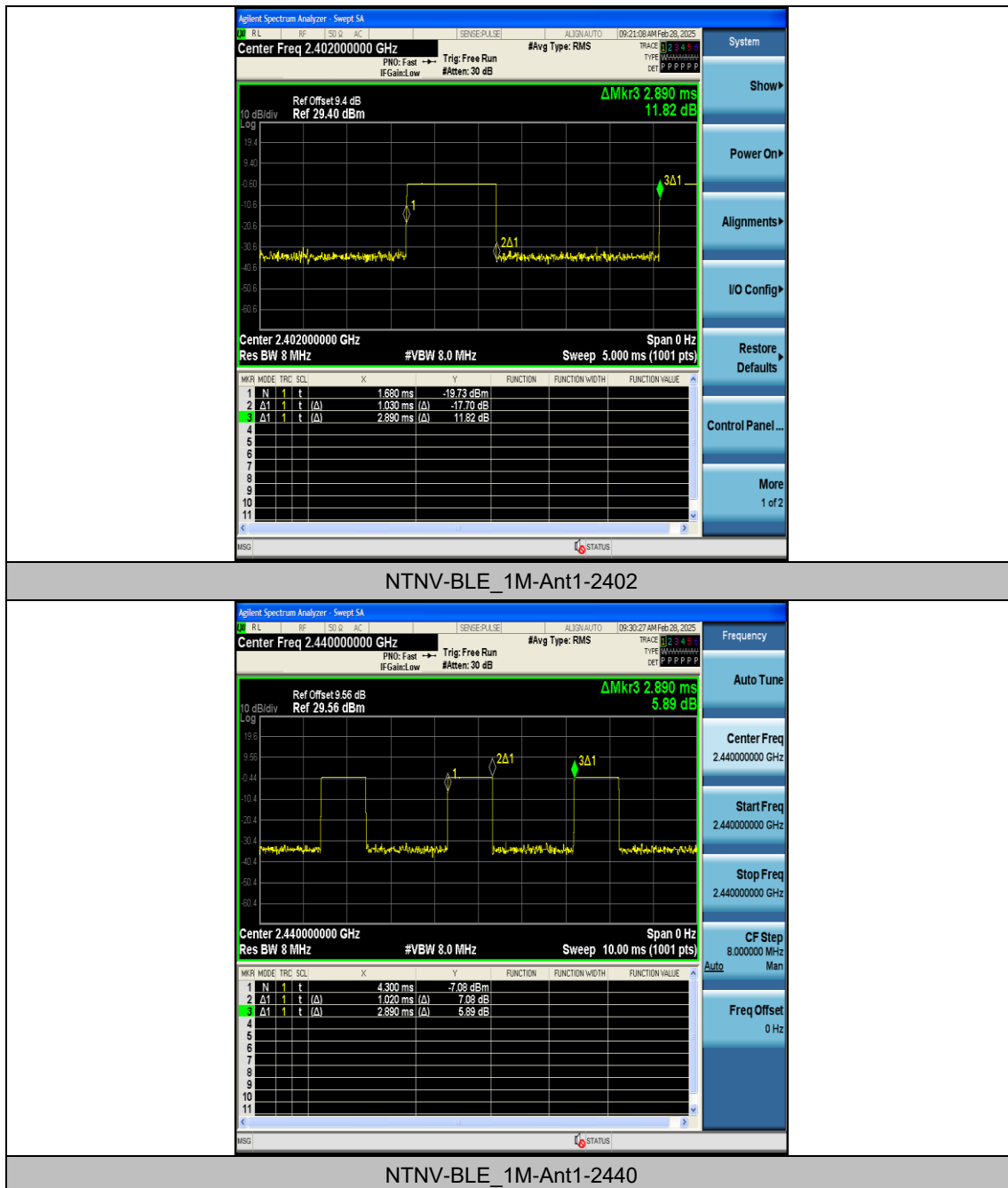


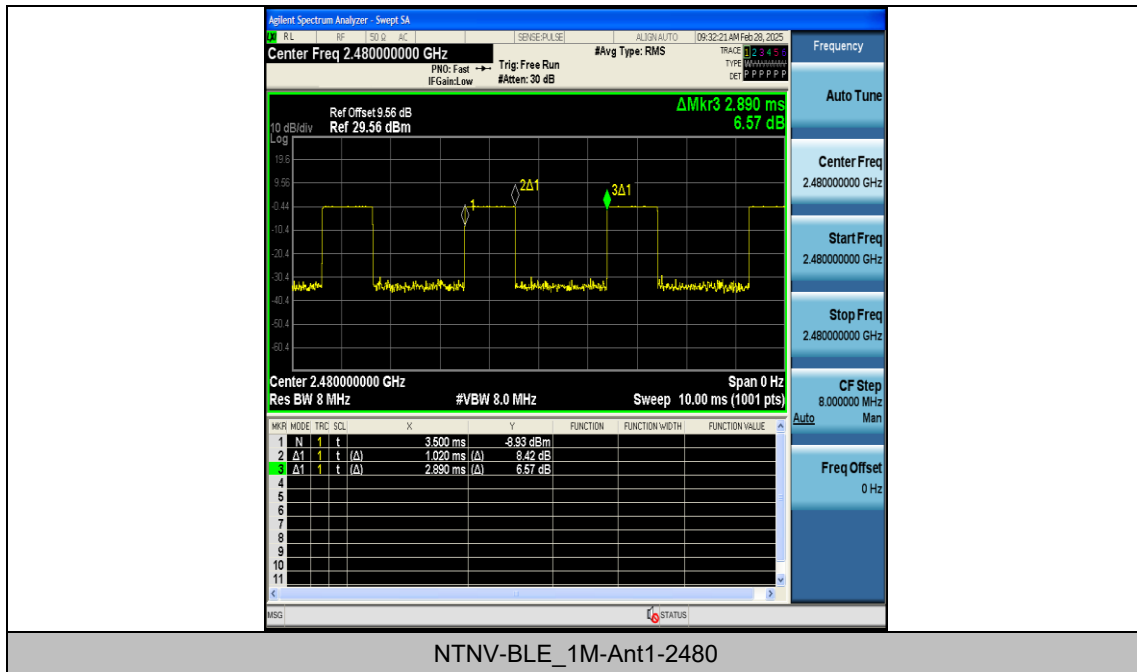
Appendix G: Duty Cycle

Test Result

Test Mode	Antenna	Frequency [MHz]	ON Time [ms]	Period [ms]	Duty Cycle [%]	Duty Cycle Factor [dB]
BLE_1M	Ant1	2402	1.03	2.89	35.64	4.48
BLE_1M	Ant1	2440	1.02	2.89	35.29	4.52
BLE_1M	Ant1	2480	1.02	2.89	35.29	4.52

Test Graphs





NTNV-BLE_1M-Ant1-2480