

Appendix Test Data for BLE (Conducted Measurement)

Product Name: Wireless Mechanical Keyboard

Trade Mark: Keychron

Test Model: Q1 MAX

FCC ID: 2ASF4-Q1MAX

Environmental Conditions

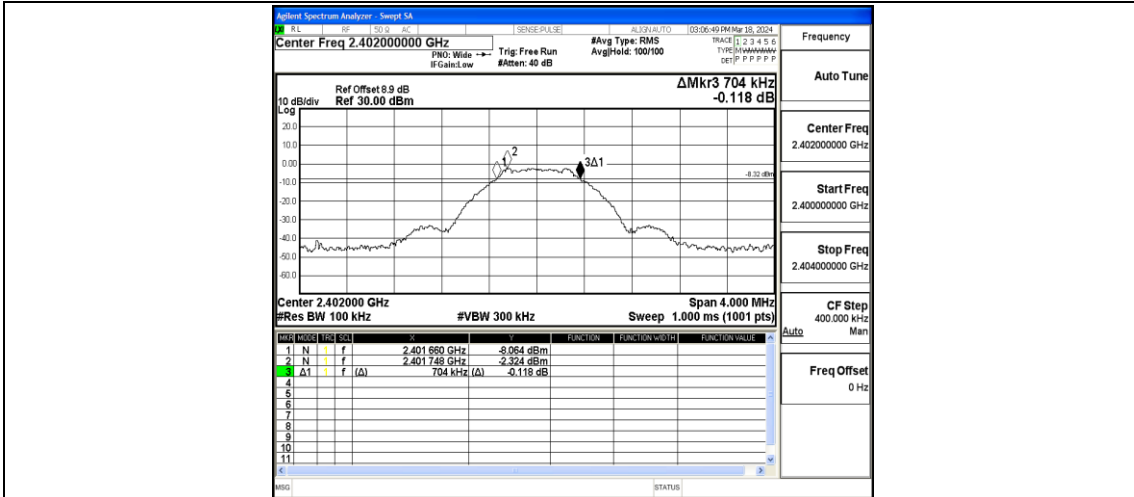
Temperature:	22.8° C
Relative Humidity:	56%
ATM Pressure:	100.0 kPa
Test Engineer:	Anna Hu
Supervised by:	Hugo Chen
NOTE	N/A

Appendix A: DTS Bandwidth

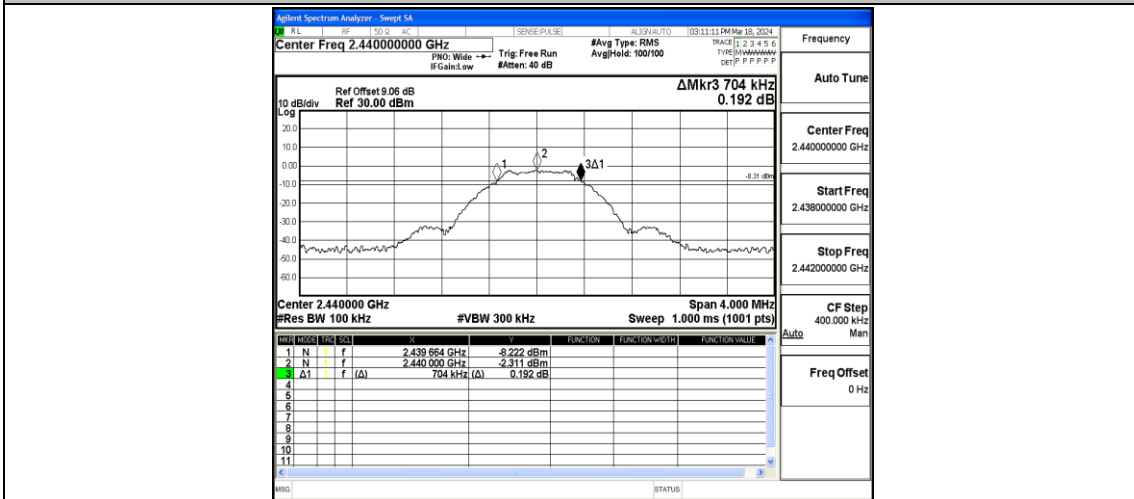
Test Result

TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.704	2401.660	2402.364	0.5	PASS
BLE_1M	Ant1	2440	0.704	2439.664	2440.368	0.5	PASS
BLE_1M	Ant1	2480	0.700	2479.660	2480.360	0.5	PASS

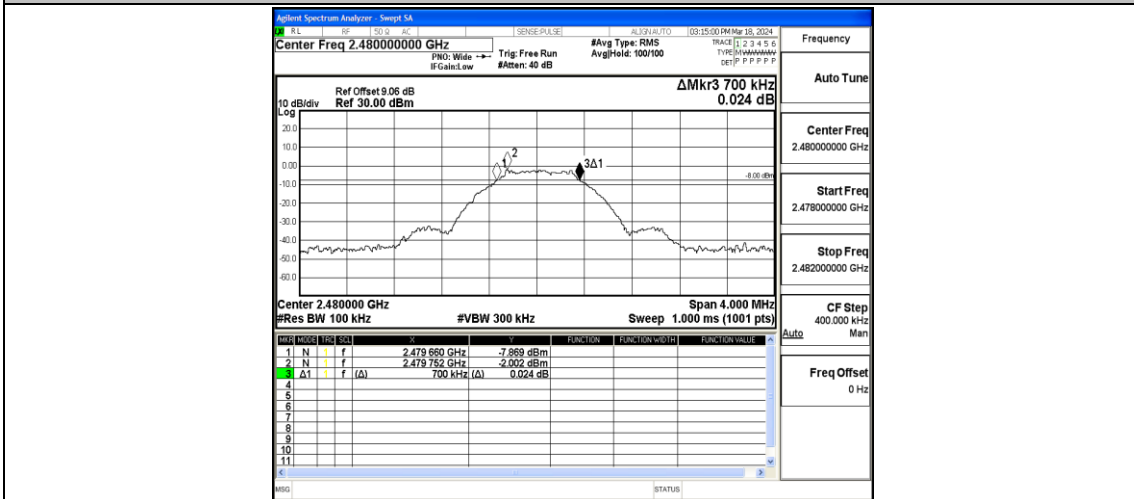
Test Graphs



BLE_1M-Ant1-240-PASS



BLE_1M-Ant1-244-PASS



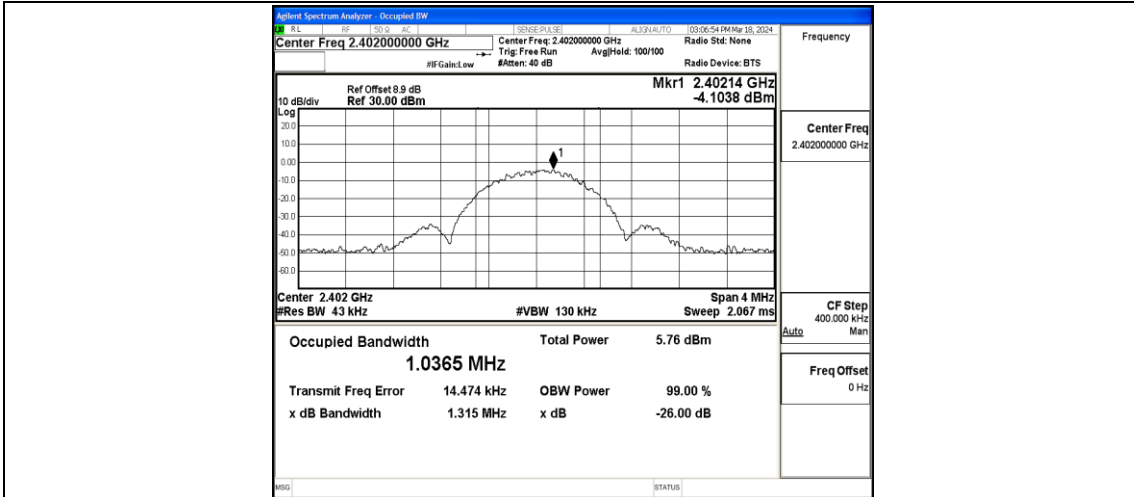
BLE_1M-Ant1-2480-PASS

Appendix B: Occupied Channel Bandwidth

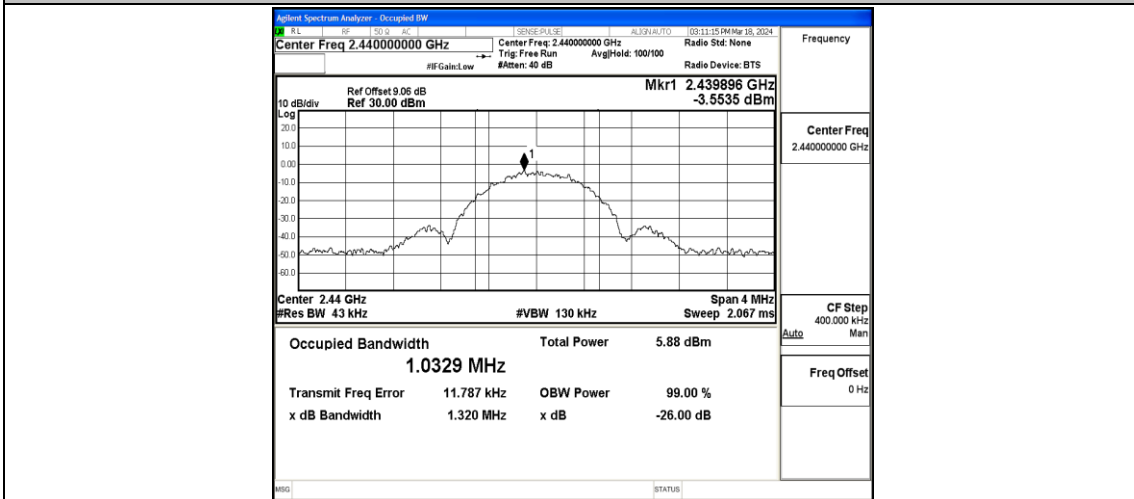
Test Result

TestMode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0365	2401.4962	2402.5327	---	---
BLE_1M	Ant1	2440	1.0329	2439.4953	2440.5282	---	---
BLE_1M	Ant1	2480	1.0244	2479.5035	2480.5279	---	---

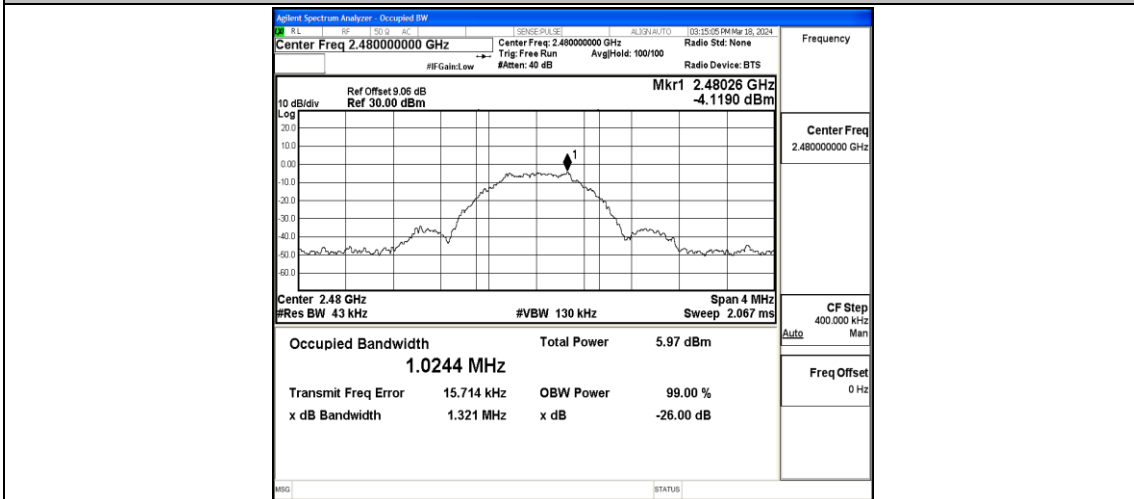
Test Graphs



BLE_1M-Ant1-2402



BLE_1M-Ant1-2440



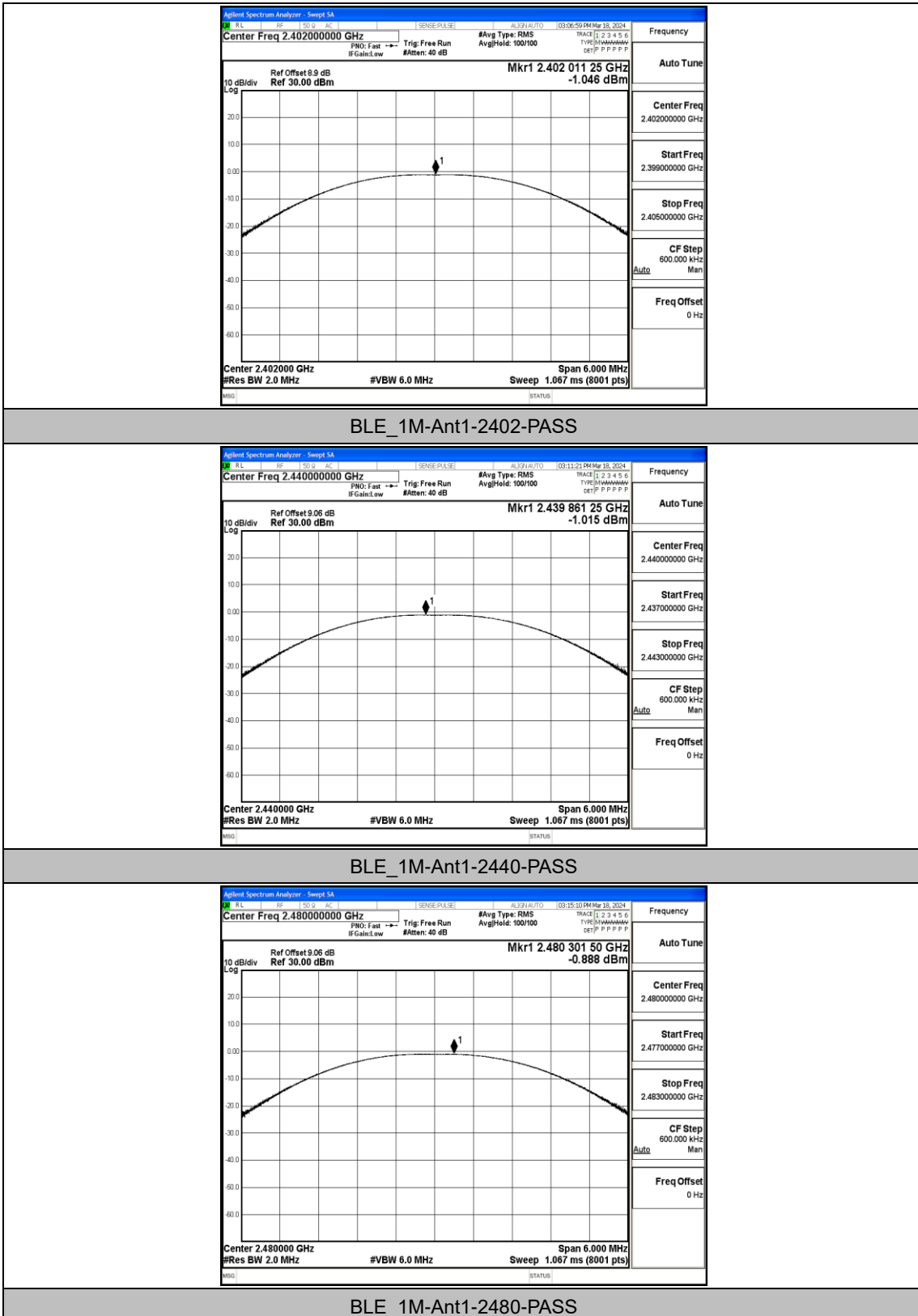
BLE_1M-Ant1-2480

Appendix C: Maximum peak conducted output power

Test Result Peak

TestMode	Antenna	Frequency[MHz]	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
BLE_1M	Ant1	2402	-1.05	≤30	PASS
BLE_1M	Ant1	2440	-1.02	≤30	PASS
BLE_1M	Ant1	2480	-0.89	≤30	PASS

Test Graphs Peak

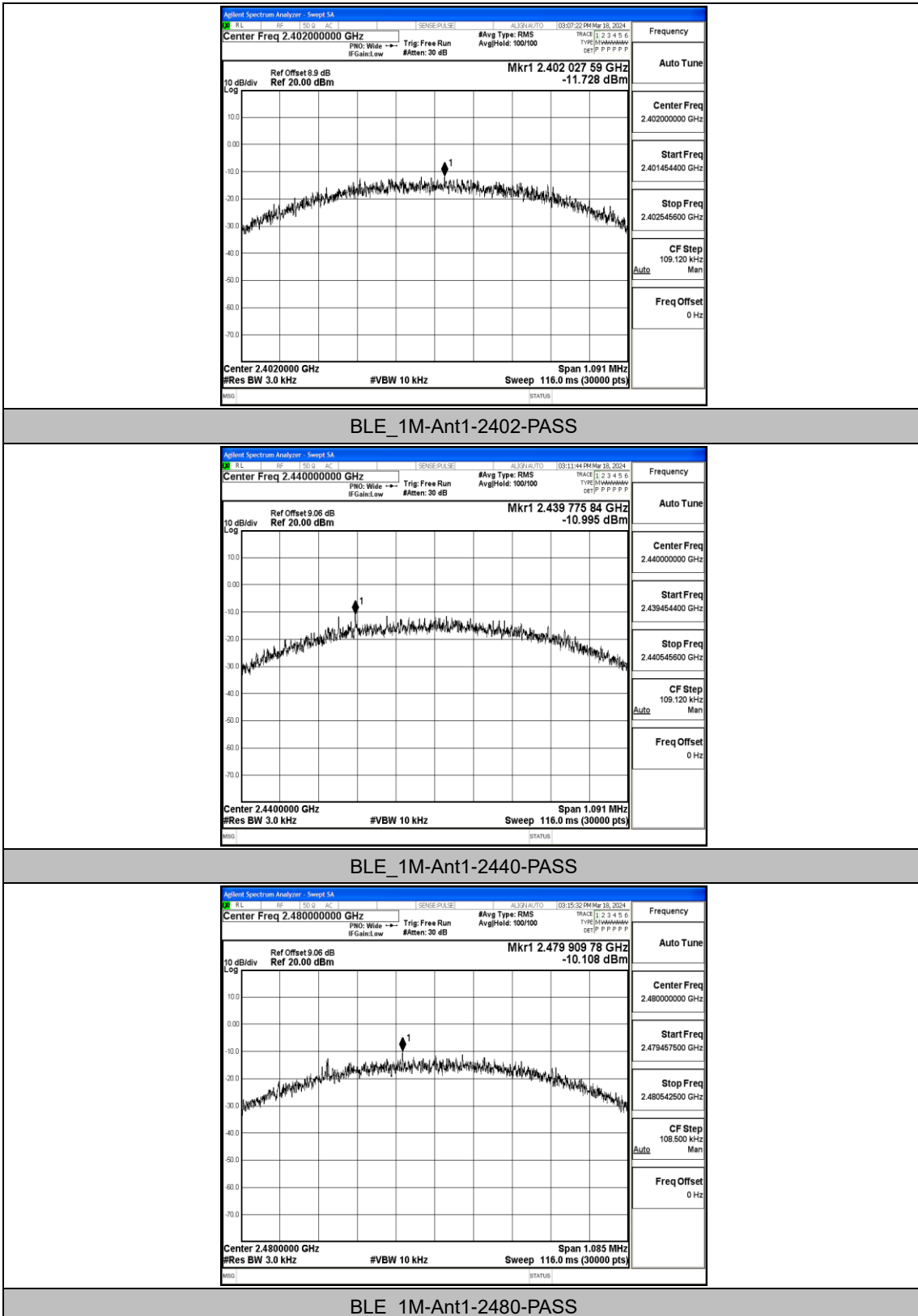


Appendix D: Maximum peak power spectral density

Test Result

TestMode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-11.73	≤8.00	PASS
BLE_1M	Ant1	2440	-11.00	≤8.00	PASS
BLE_1M	Ant1	2480	-10.11	≤8.00	PASS

Test Graphs

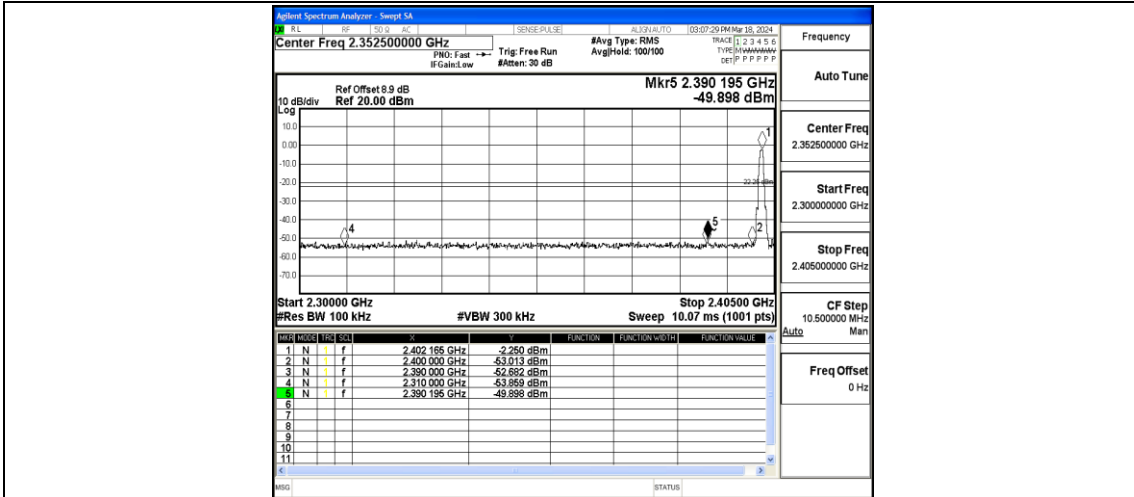


Appendix E: Band edge measurements

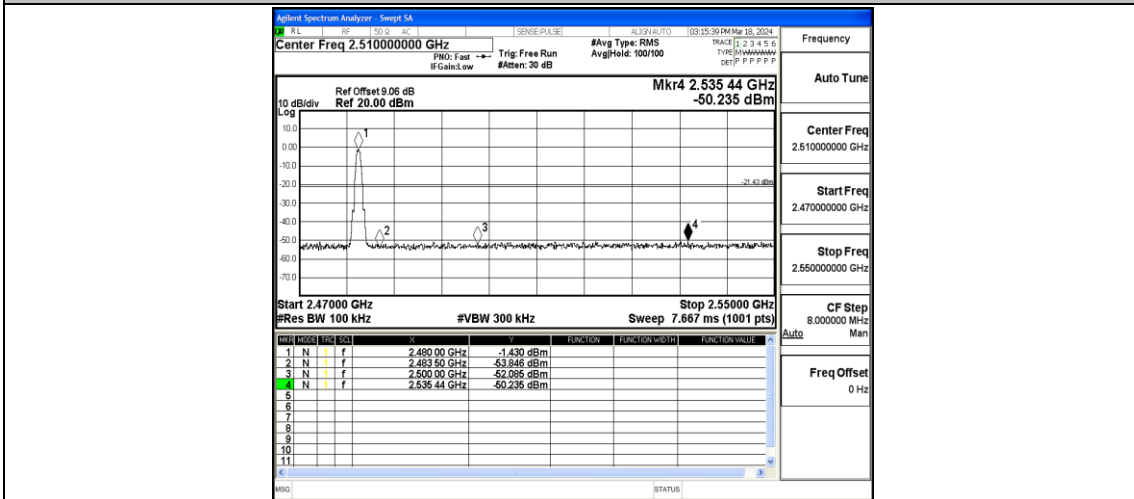
Test Result

TestMode	Antenna	Channel	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	-2.25	-49.9	≤-22.25	PASS
BLE_1M	Ant1	High	2480	-1.43	-50.24	≤-21.43	PASS

Test Graphs



BLE_1M-Ant1-240-PASS



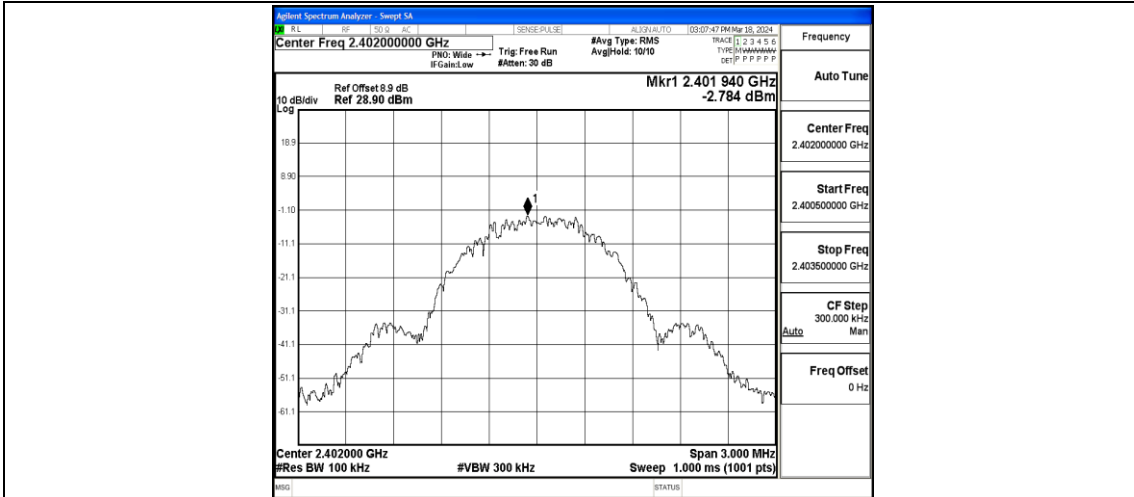
BLE_1M-Ant1-2480-PASS

Appendix F: Conducted Spurious Emission

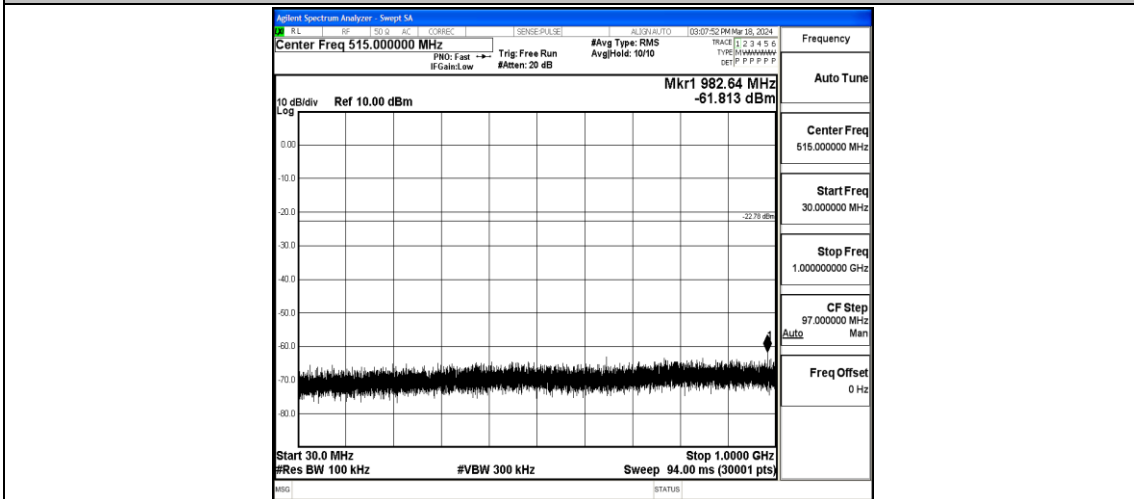
Test Result

TestMode	Antenna	Frequency[MHz]	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	0~Reference	-2.78	-2.78	---	PASS
BLE_1M	Ant1	2402	30~1000	-2.78	-61.81	≤-22.78	PASS
BLE_1M	Ant1	2402	1000~26500	-2.78	-49.34	≤-22.78	PASS
BLE_1M	Ant1	2440	0~Reference	-2.18	-2.18	---	PASS
BLE_1M	Ant1	2440	30~1000	-2.18	-63.14	≤-22.18	PASS
BLE_1M	Ant1	2440	1000~26500	-2.18	-47.81	≤-22.18	PASS
BLE_1M	Ant1	2480	0~Reference	-2.68	-2.68	---	PASS
BLE_1M	Ant1	2480	30~1000	-2.68	-63.53	≤-22.68	PASS
BLE_1M	Ant1	2480	1000~26500	-2.68	-50.12	≤-22.68	PASS

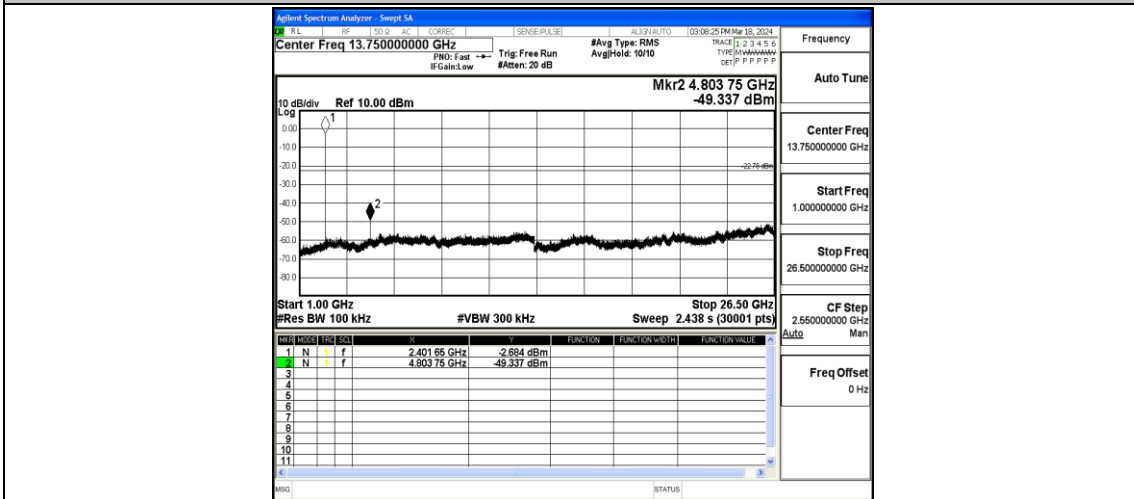
Test Graphs



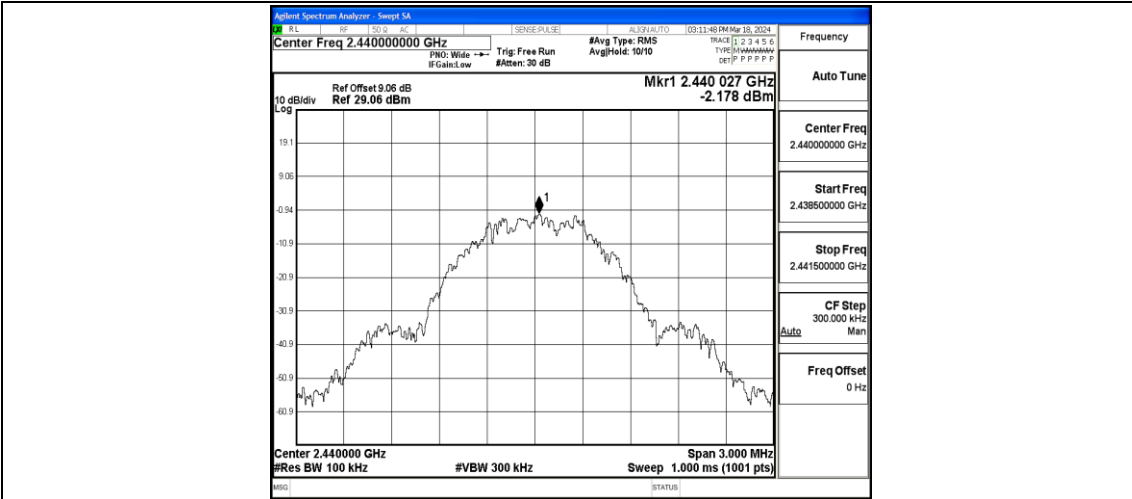
BLE_1M-Ant1-2402-0~Reference-PASS



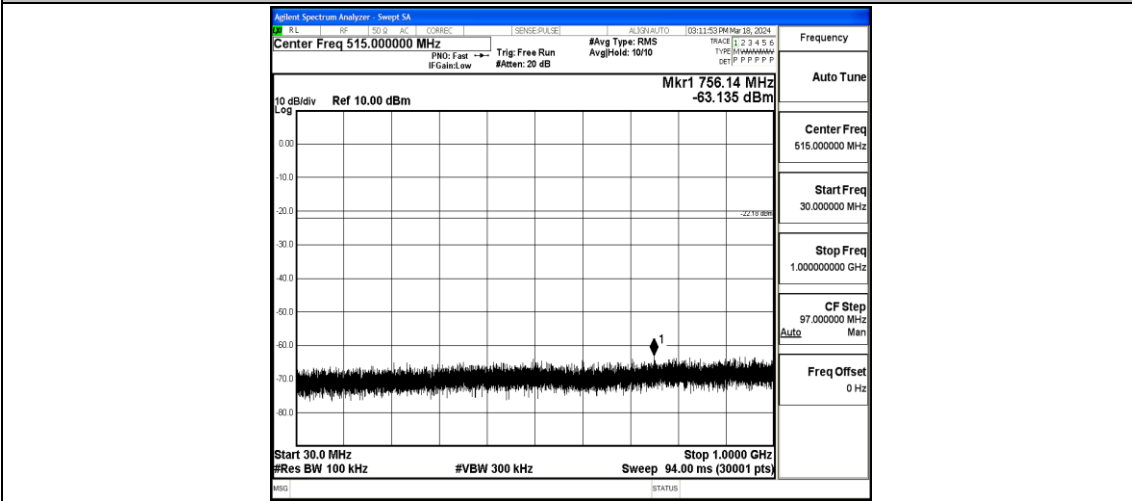
BLE_1M-Ant1-2402-30~1000-PASS



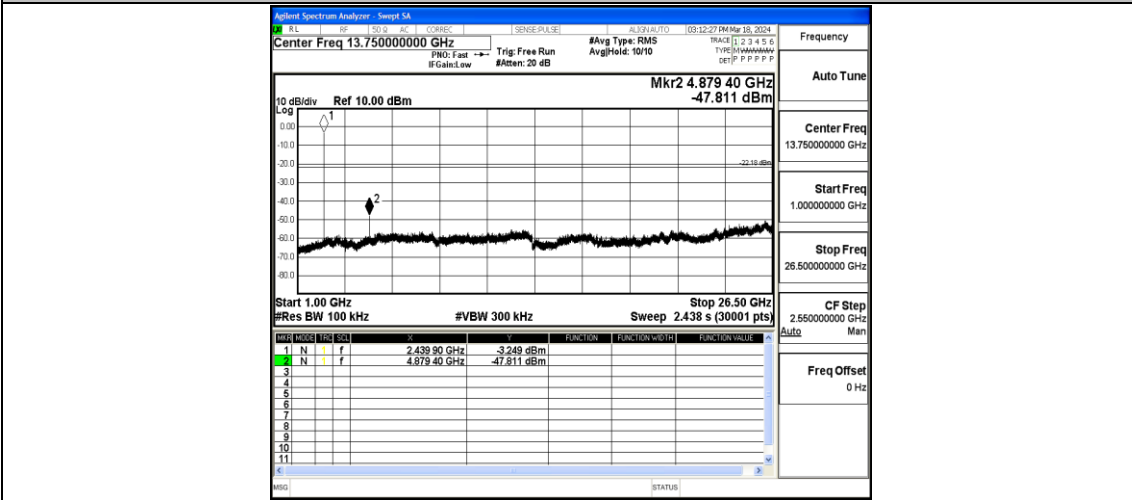
BLE_1M-Ant1-2402-1000~26500-PASS



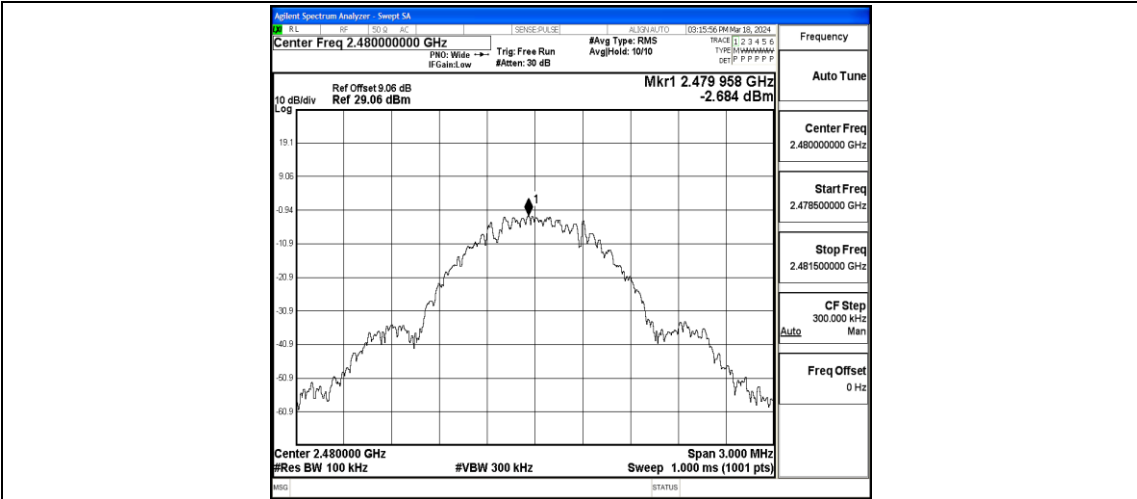
BLE_1M-Ant1-2440-0~Reference-PASS



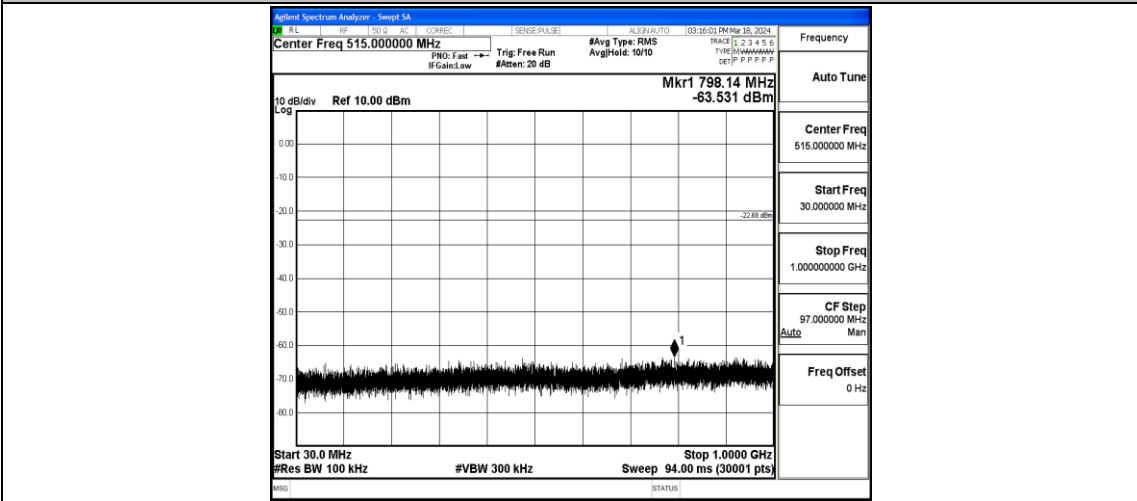
BLE_1M-Ant1-2440-30~1000-PASS



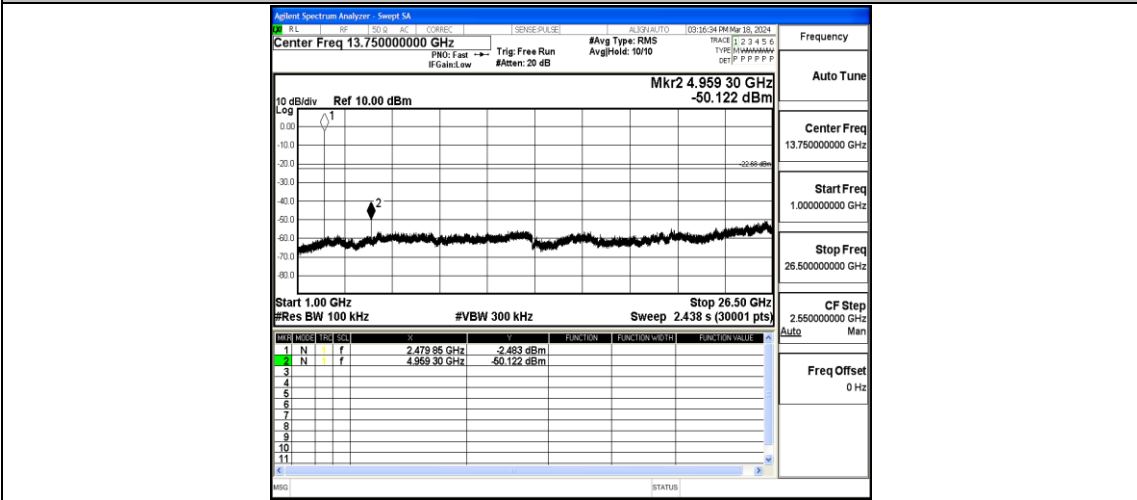
BLE_1M-Ant1-2440-1000~26500-PASS



BLE_1M-Ant1-2480-0~Reference-PASS



BLE_1M-Ant1-2480-30~1000-PASS



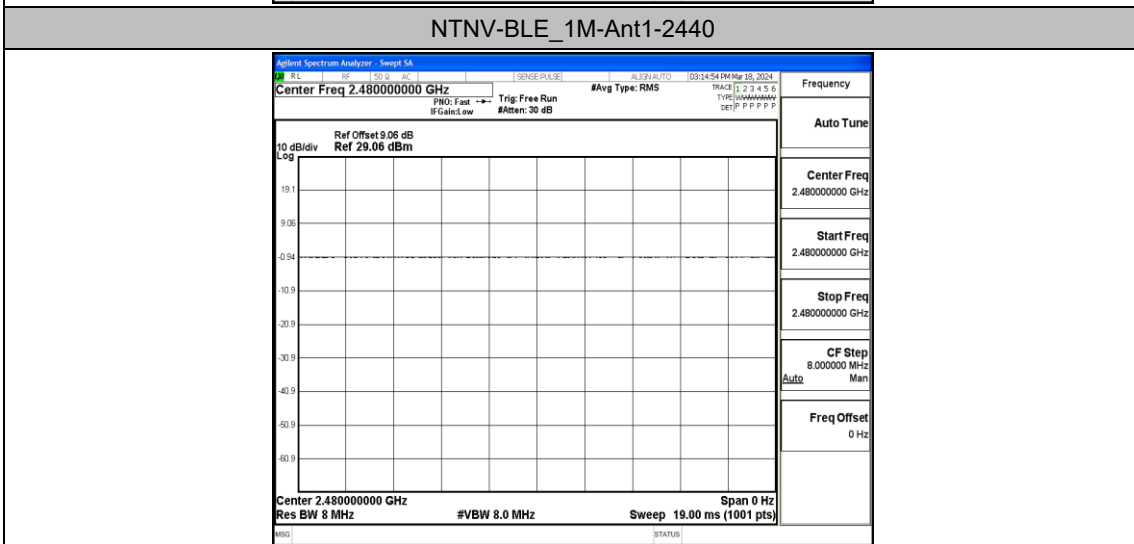
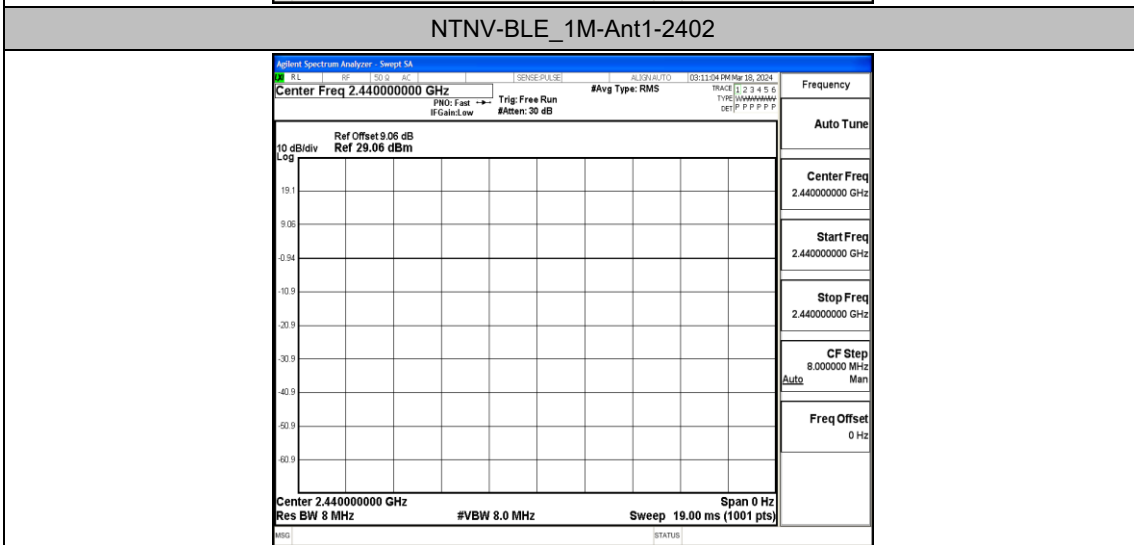
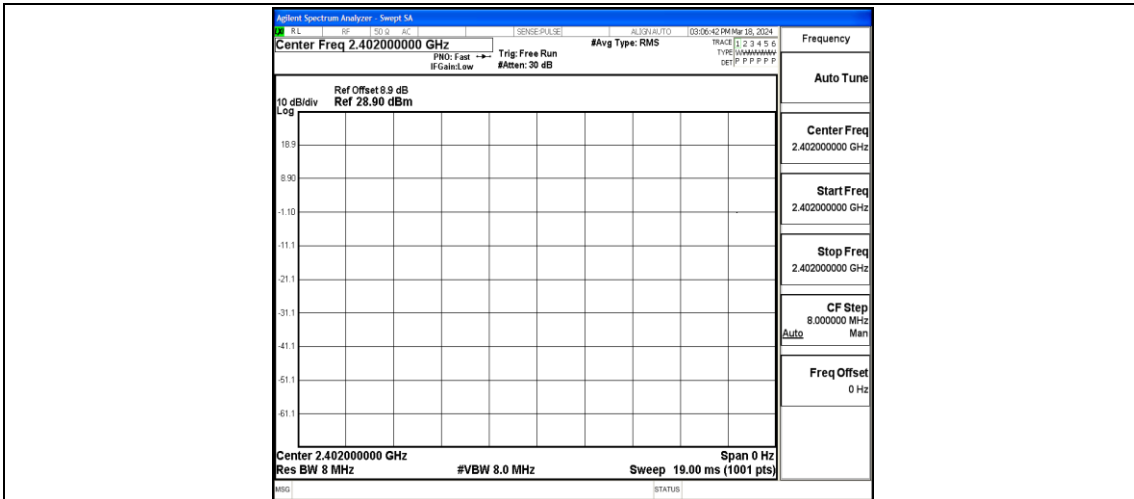
BLE_1M-Ant1-2480-1000~26500-PASS

Appendix G: Duty Cycle

Test Result

TestMode	Antenna	Frequency[MHz]	ON Time [ms]	Period [ms]	Duty Cycle [%]	Duty Cycle Factor[dB]
BLE_1M	Ant1	2402	19.00	19.00	100	0
BLE_1M	Ant1	2440	19.00	19.00	100	0
BLE_1M	Ant1	2480	19.00	19.00	100	0

Test Graphs



Appendix H: Emissions in Restricted Bands

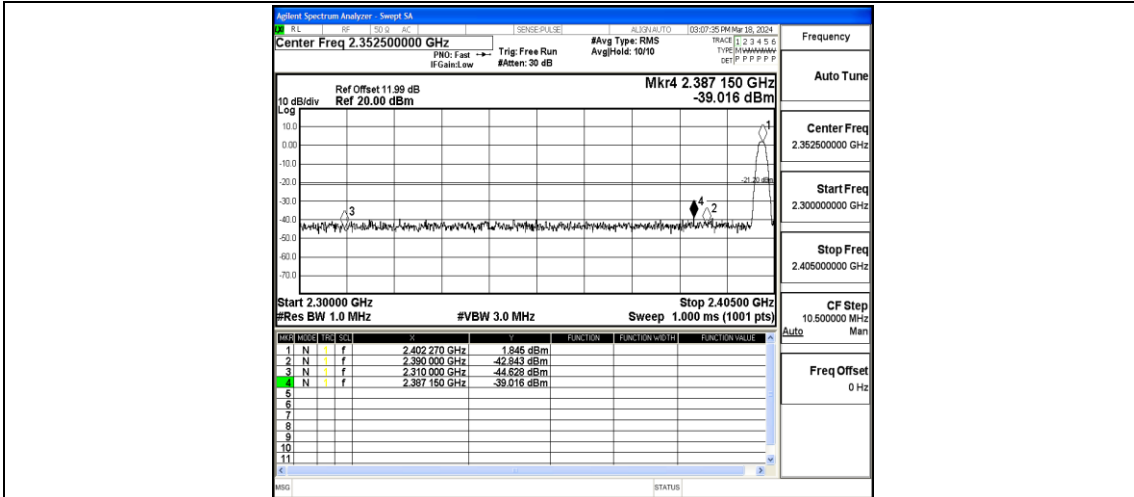
Test Result

TestMode	Antenna	ChName	Frequency [MHz]	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
BLE_1M	Ant1	Low	2402	Peak	2390.000	-42.84	≤-21.20	52.36	≤74	PASS
BLE_1M	Ant1	Low	2402	Peak	2310.000	-44.63	≤-21.20	50.57	≤74	PASS
BLE_1M	Ant1	Low	2402	Peak	2387.150	-39.02	≤-21.20	56.18	≤74	PASS
BLE_1M	Ant1	Low	2402	AV	2390.000	-48.87	≤-41.20	46.33	≤54	PASS
BLE_1M	Ant1	Low	2402	AV	2310.000	-49.08	≤-41.20	46.12	≤54	PASS
BLE_1M	Ant1	Low	2402	AV	2378.120	-48.62	≤-41.20	46.58	≤54	PASS
BLE_1M	Ant1	High	2480	Peak	2483.500	-42.82	≤-21.20	52.38	≤74	PASS
BLE_1M	Ant1	High	2480	Peak	2500.000	-42.75	≤-21.20	52.45	≤74	PASS
BLE_1M	Ant1	High	2480	Peak	2499.440	-39.49	≤-21.20	55.71	≤74	PASS
BLE_1M	Ant1	High	2480	AV	2483.500	-49.08	≤-41.20	46.12	≤54	PASS
BLE_1M	Ant1	High	2480	AV	2500.000	-48.59	≤-41.20	46.61	≤54	PASS
BLE_1M	Ant1	High	2480	AV	2488.240	-48	≤-41.20	47.20	≤54	PASS

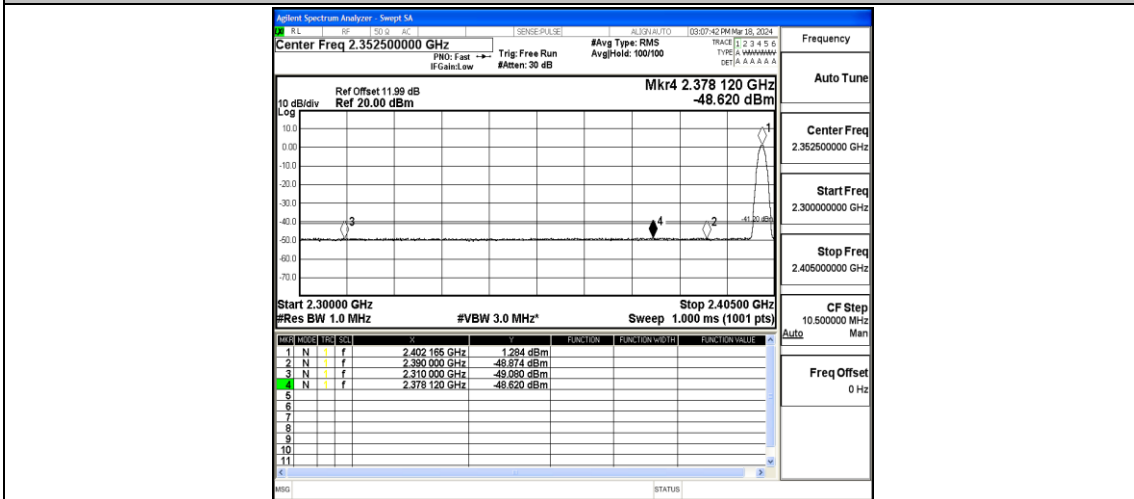
Note:

1. The Antenna Gain is compensated in the graph.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

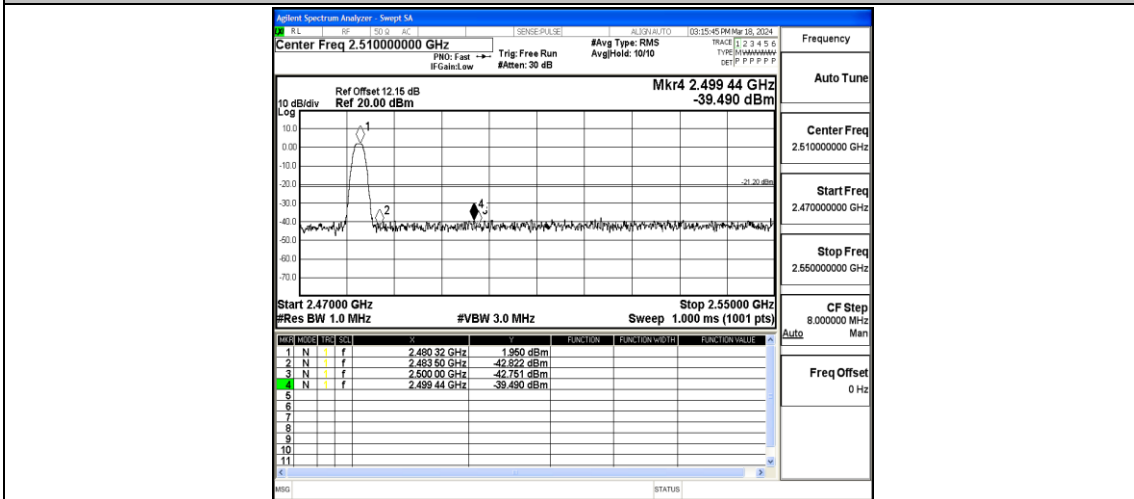
Test Graphs



BLE_1M-Ant1-240-PASS



BLE_1M-Ant1-240-PASS



BLE_1M-Ant1-2480-PASS

