

Appendix Test Data for BLE (Conducted Measurement)

Product Name: Wireless Mechanical Keyboard

Trade Mark: Keychron

Test Model: K13 Max

FCC ID: 2ASF4-K13MAX

Environmental Conditions

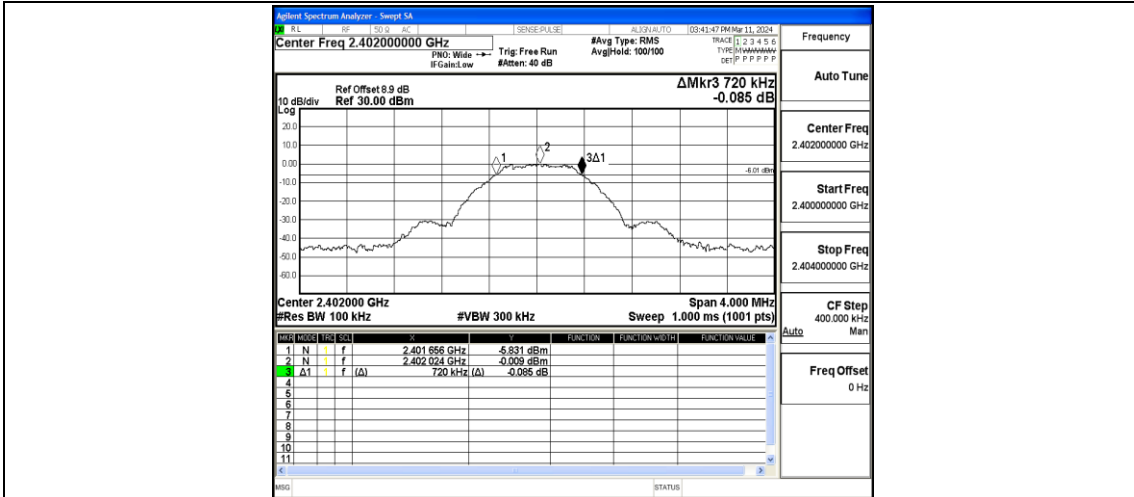
Temperature:	22.8° C
Relative Humidity:	56%
ATM Pressure:	100.0 kPa
Test Engineer:	Anna Hu
Supervised by:	Hugo Chen
NOTE	N/A

Appendix A: DTS Bandwidth

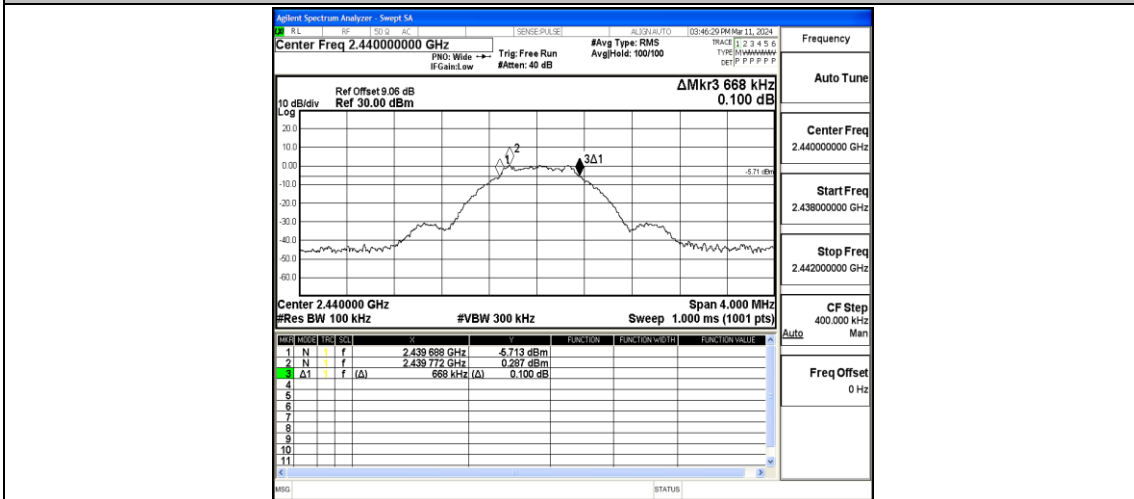
Test Result

TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.720	2401.656	2402.376	0.5	PASS
BLE_1M	Ant1	2440	0.668	2439.688	2440.356	0.5	PASS
BLE_1M	Ant1	2480	0.712	2479.656	2480.368	0.5	PASS

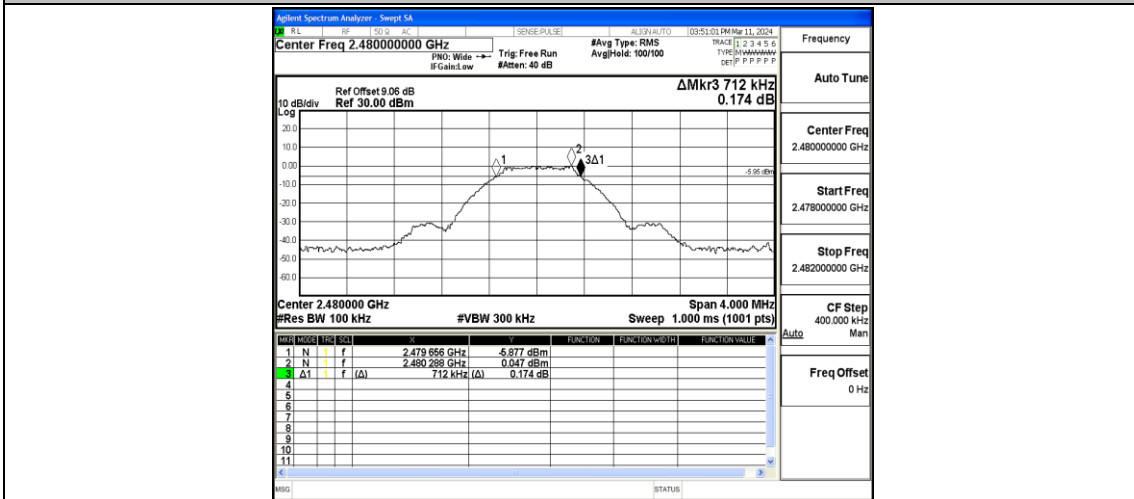
Test Graphs



BLE_1M-Ant1-240-PASS



BLE_1M-Ant1-244-PASS



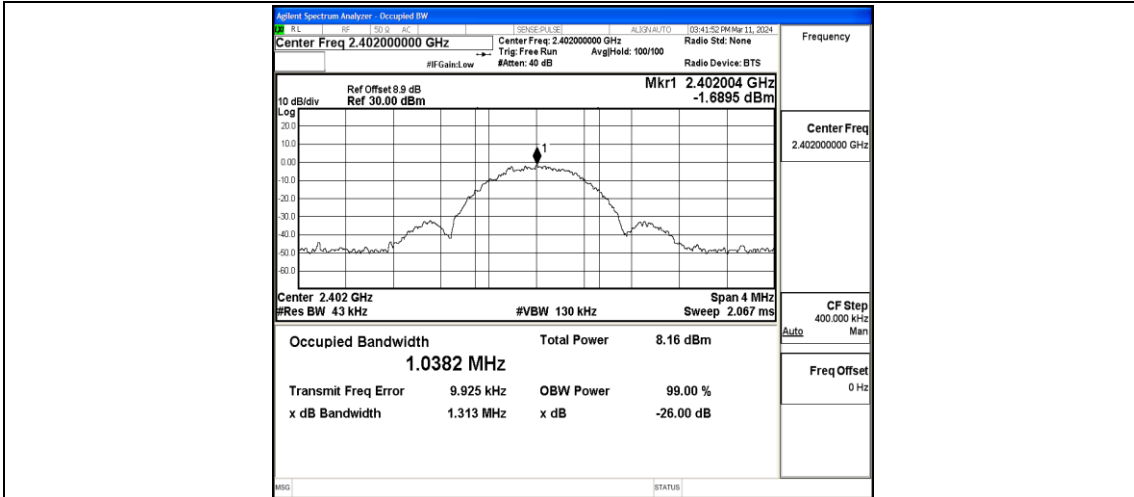
BLE_1M-Ant1-2480-PASS

Appendix B: Occupied Channel Bandwidth

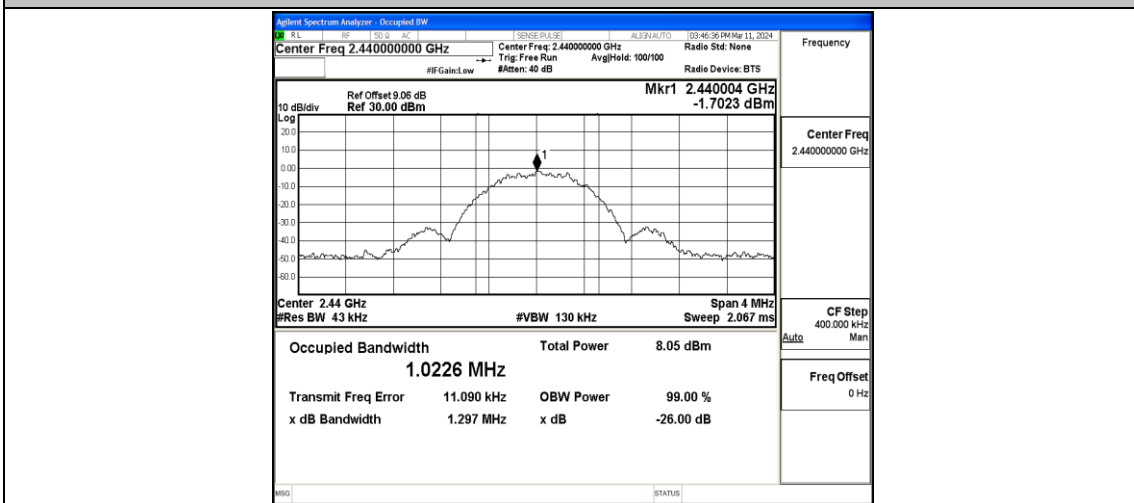
Test Result

TestMode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0382	2401.4908	2402.5290	---	---
BLE_1M	Ant1	2440	1.0226	2439.4998	2440.5224	---	---
BLE_1M	Ant1	2480	1.0325	2479.4934	2480.5259	---	---

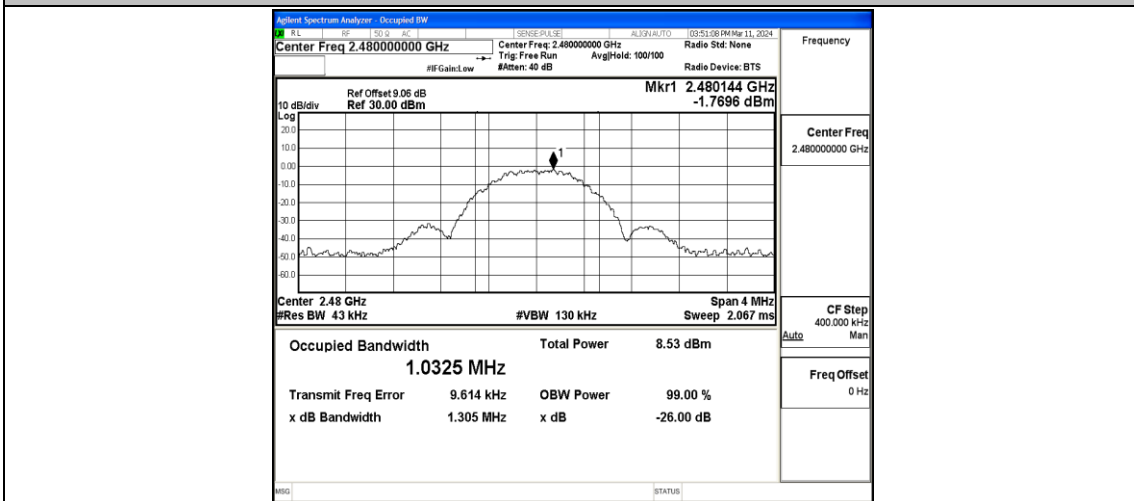
Test Graphs



BLE_1M-Ant1-2402



BLE_1M-Ant1-2440



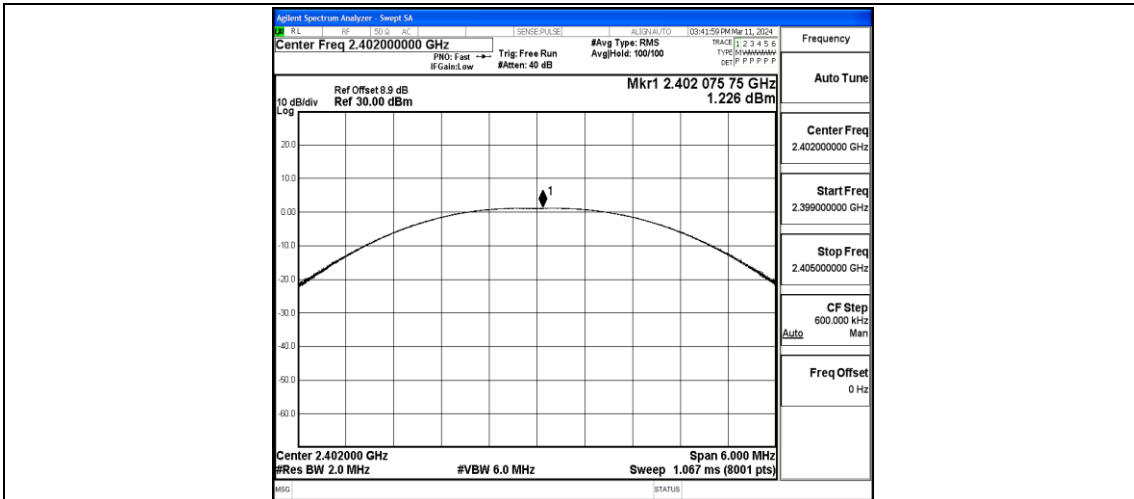
BLE_1M-Ant1-2480

Appendix C: Maximum peak conducted output power

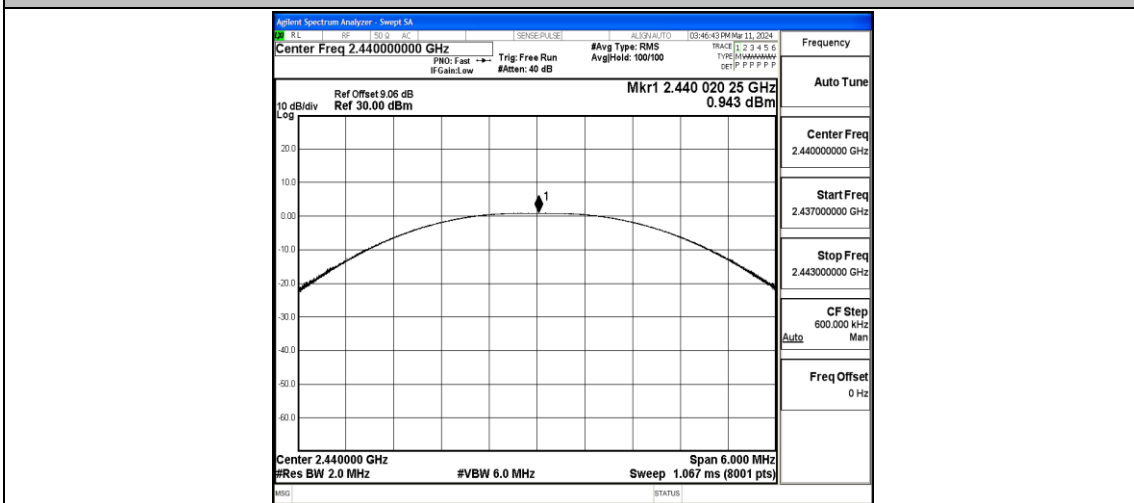
Test Result Peak

TestMode	Antenna	Frequency[MHz]	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
BLE_1M	Ant1	2402	1.23	≤30	PASS
BLE_1M	Ant1	2440	0.94	≤30	PASS
BLE_1M	Ant1	2480	1.29	≤30	PASS

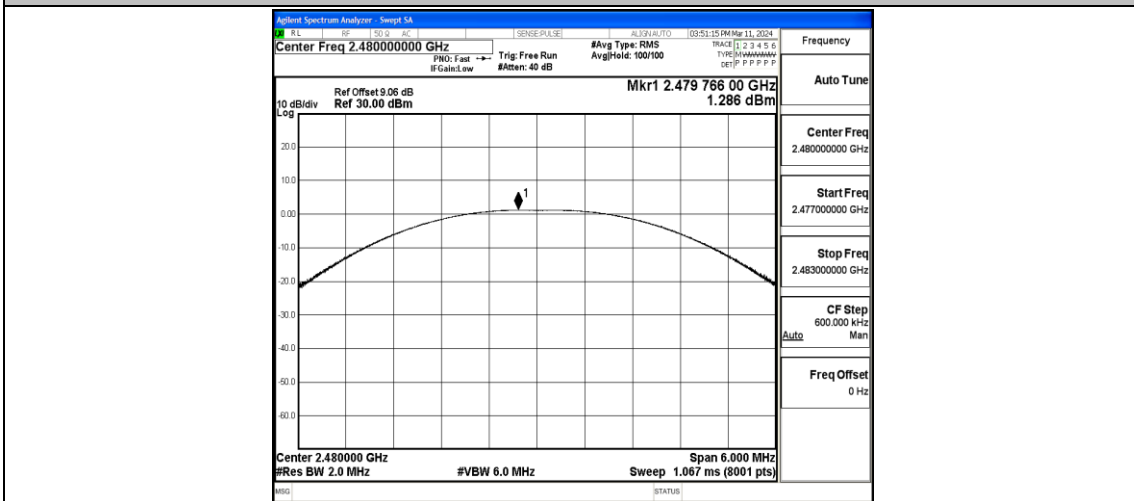
Test Graphs Peak



BLE_1M-Ant1-240-PASS



BLE_1M-Ant1-244-PASS



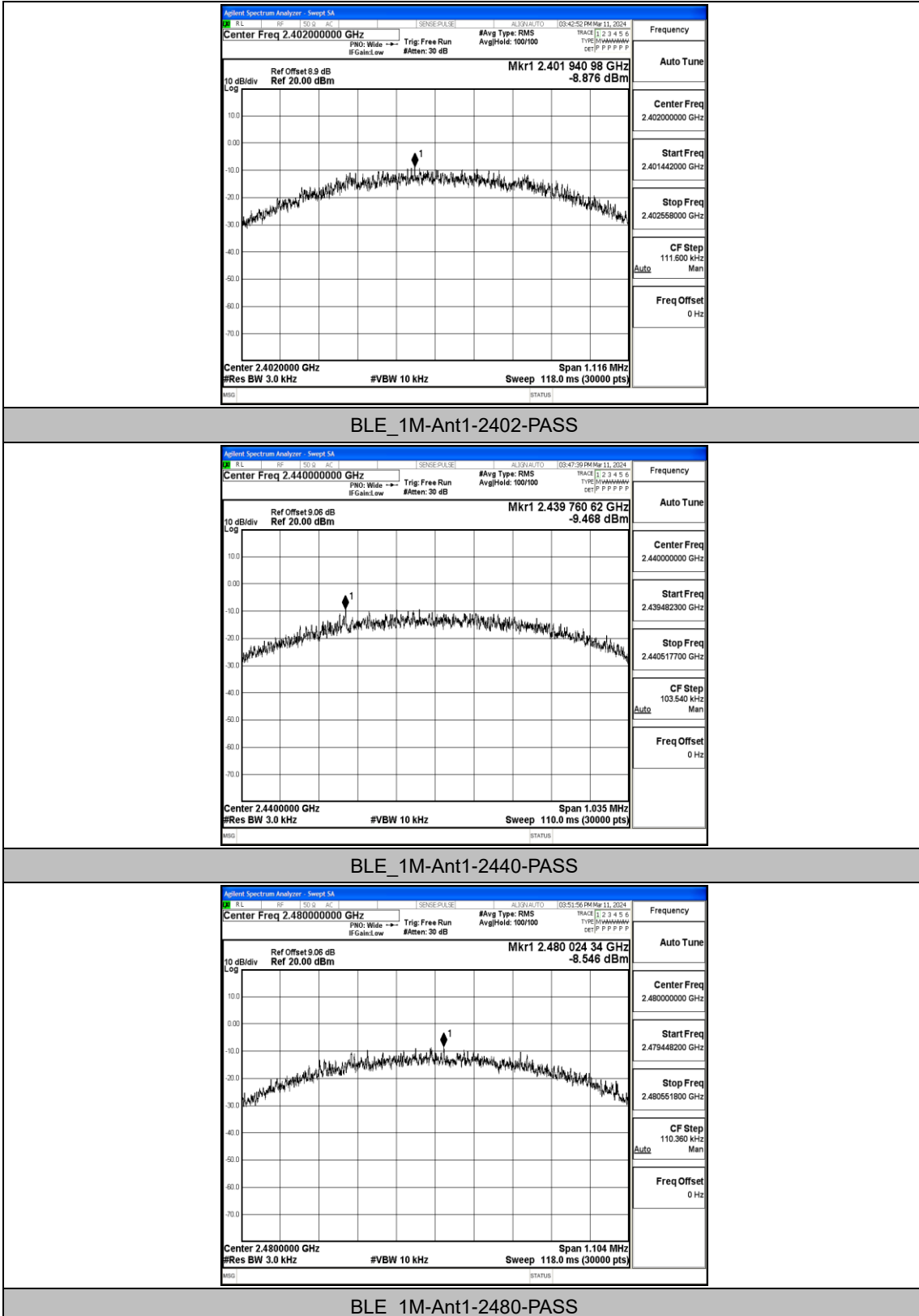
BLE_1M-Ant1-248-PASS

Appendix D: Maximum peak power spectral density

Test Result

TestMode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-8.88	≤8.00	PASS
BLE_1M	Ant1	2440	-9.47	≤8.00	PASS
BLE_1M	Ant1	2480	-8.55	≤8.00	PASS

Test Graphs

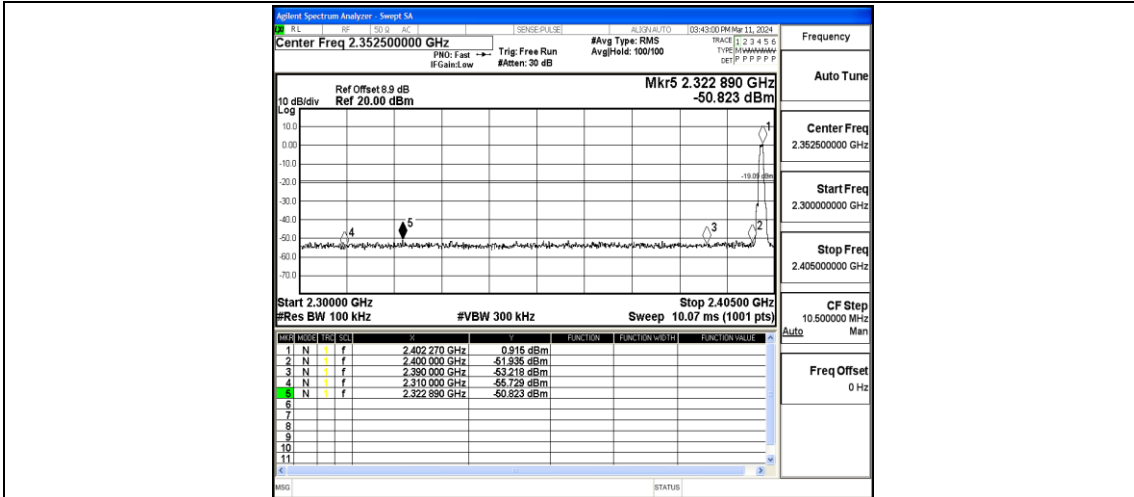


Appendix E: Band edge measurements

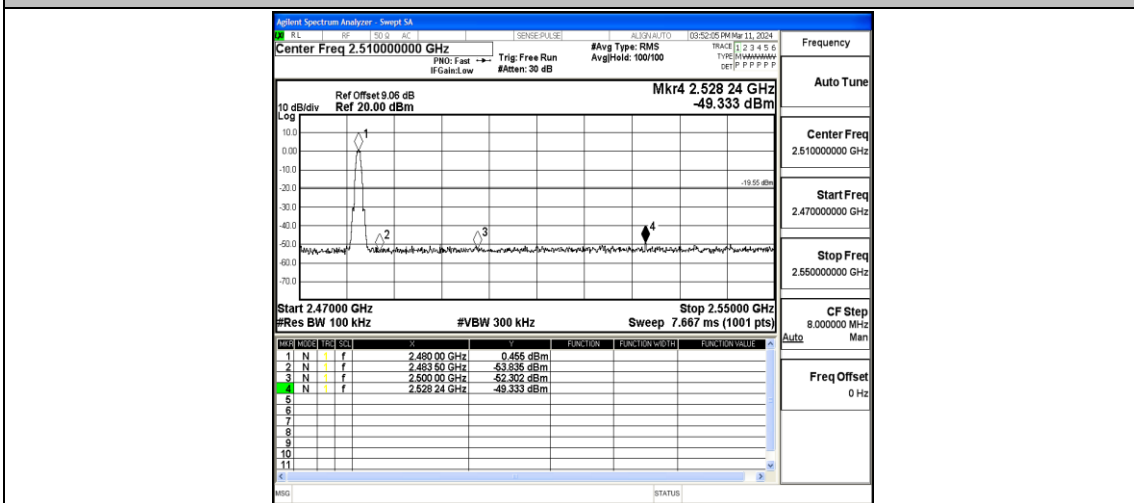
Test Result

TestMode	Antenna	Channel	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	0.92	-50.82	≤-19.09	PASS
BLE_1M	Ant1	High	2480	0.46	-49.33	≤-19.55	PASS

Test Graphs



BLE_1M-Ant1-240-PASS



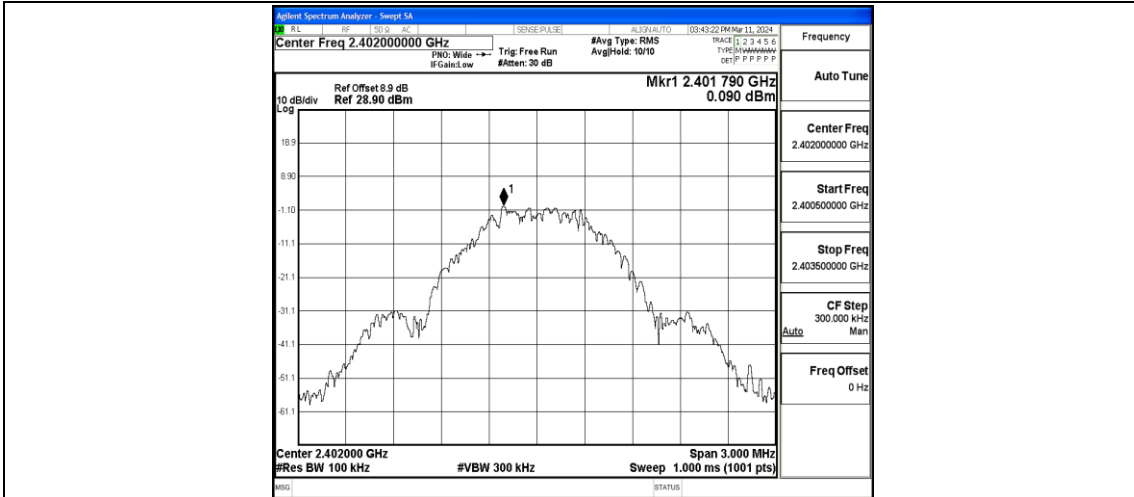
BLE_1M-Ant1-2480-PASS

Appendix F: Conducted Spurious Emission

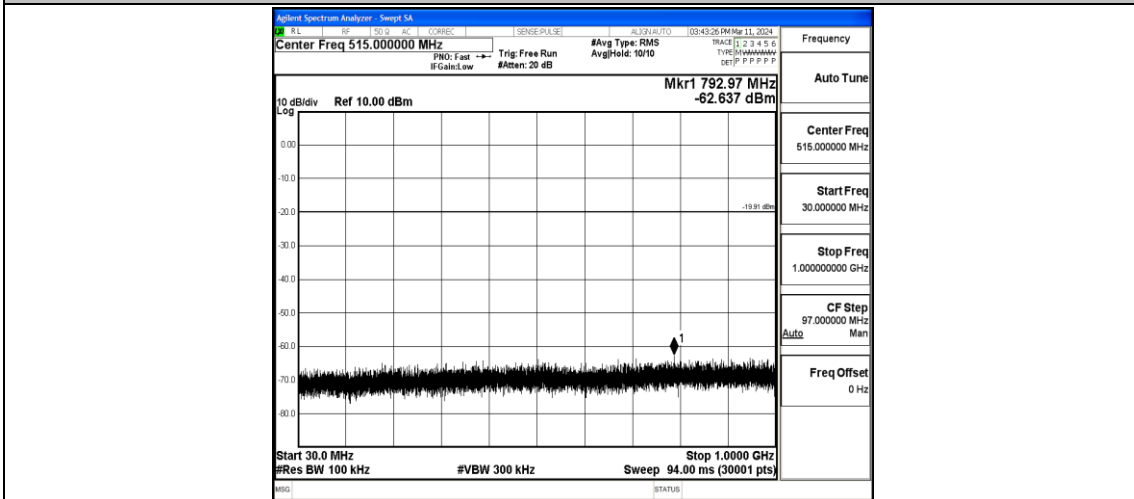
Test Result

TestMode	Antenna	Frequency[MHz]	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	0~Reference	0.09	0.09	---	PASS
BLE_1M	Ant1	2402	30~1000	0.09	-62.64	≤-19.91	PASS
BLE_1M	Ant1	2402	1000~26500	0.09	-42.77	≤-19.91	PASS
BLE_1M	Ant1	2440	0~Reference	0.27	0.27	---	PASS
BLE_1M	Ant1	2440	30~1000	0.27	-63.26	≤-19.73	PASS
BLE_1M	Ant1	2440	1000~26500	0.27	-43.89	≤-19.73	PASS
BLE_1M	Ant1	2480	0~Reference	-0.46	-0.46	---	PASS
BLE_1M	Ant1	2480	30~1000	-0.46	-62.89	≤-20.46	PASS
BLE_1M	Ant1	2480	1000~26500	-0.46	-44	≤-20.46	PASS

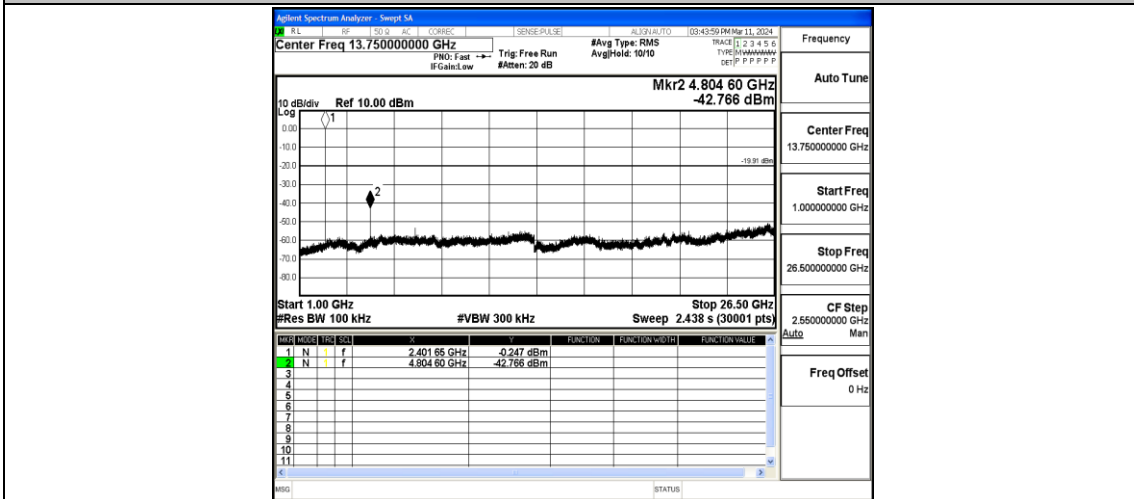
Test Graphs



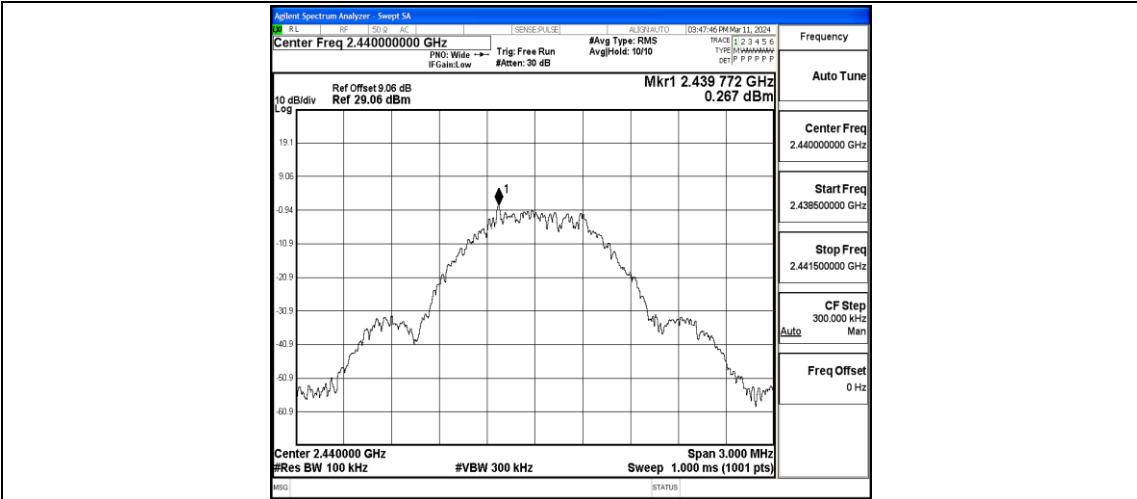
BLE_1M-Ant1-2402-0~Reference-PASS



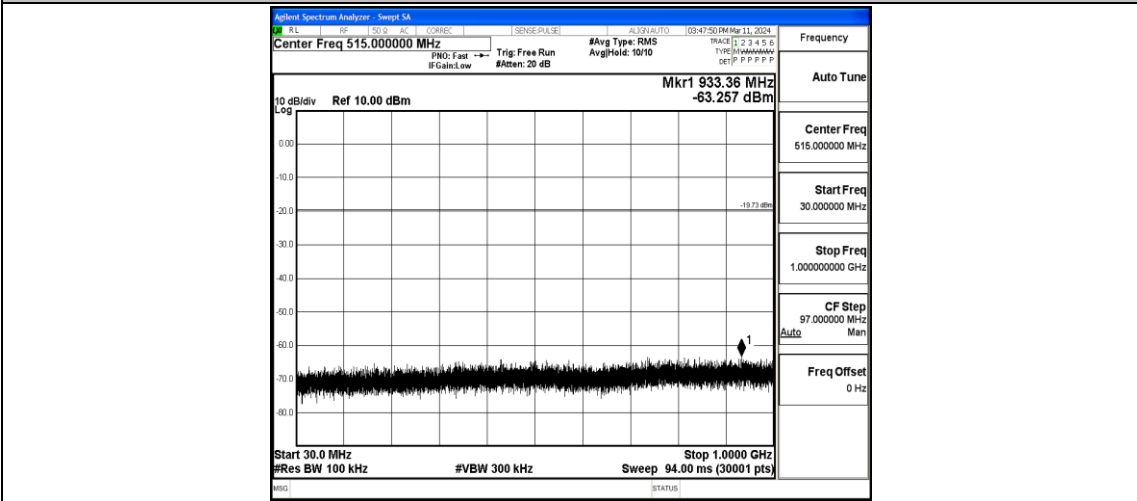
BLE_1M-Ant1-2402-30~1000-PASS



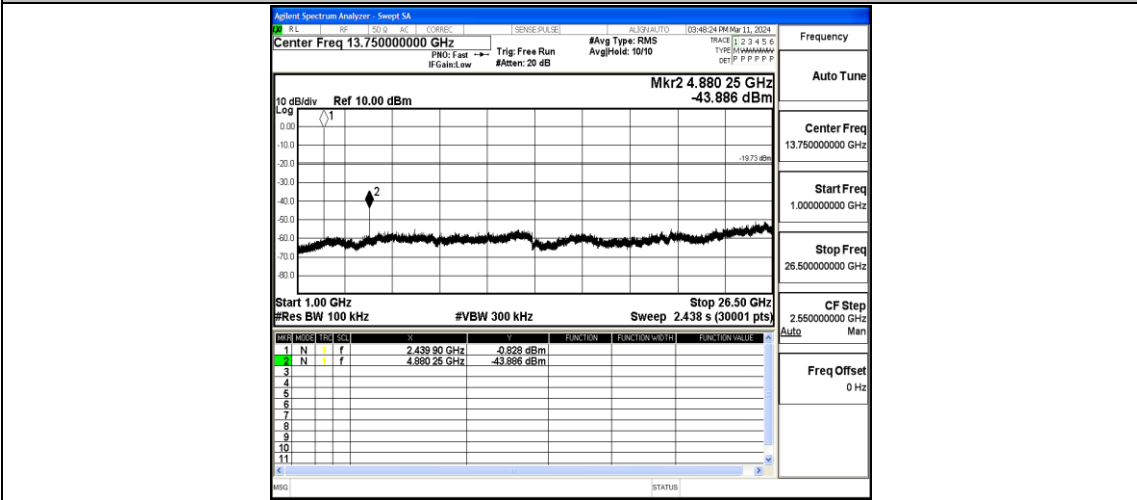
BLE_1M-Ant1-2402-1000~26500-PASS



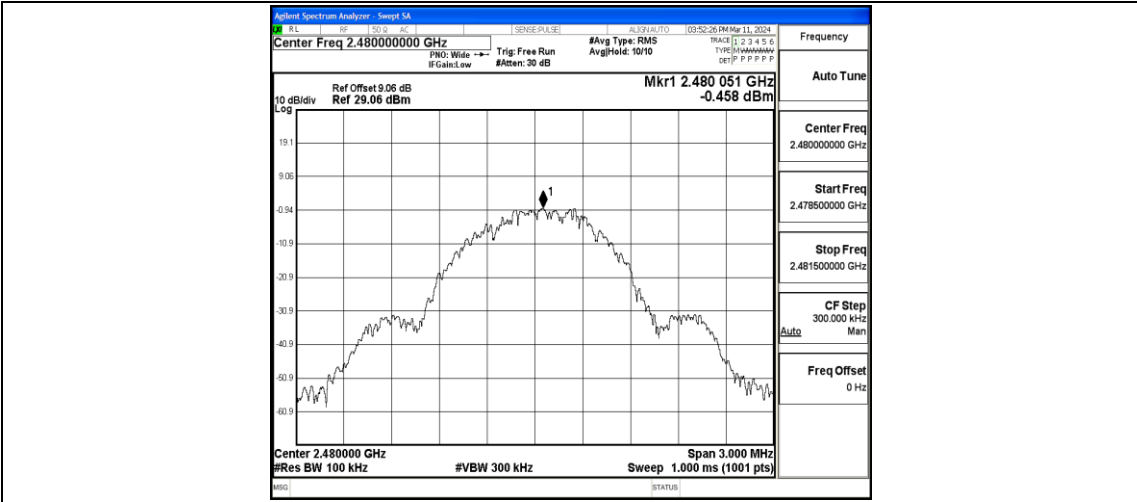
BLE_1M-Ant1-2440-0~Reference-PASS



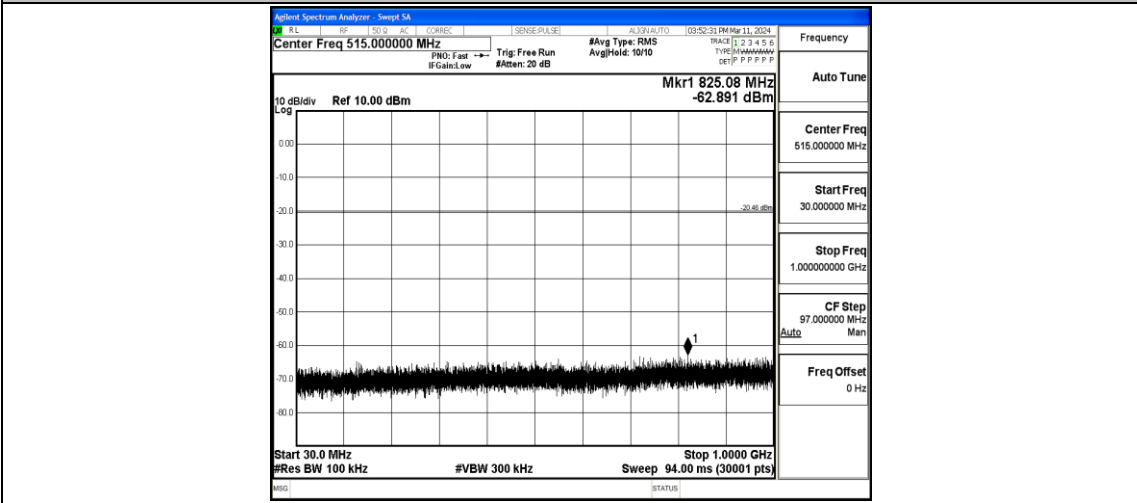
BLE_1M-Ant1-2440-30~1000-PASS



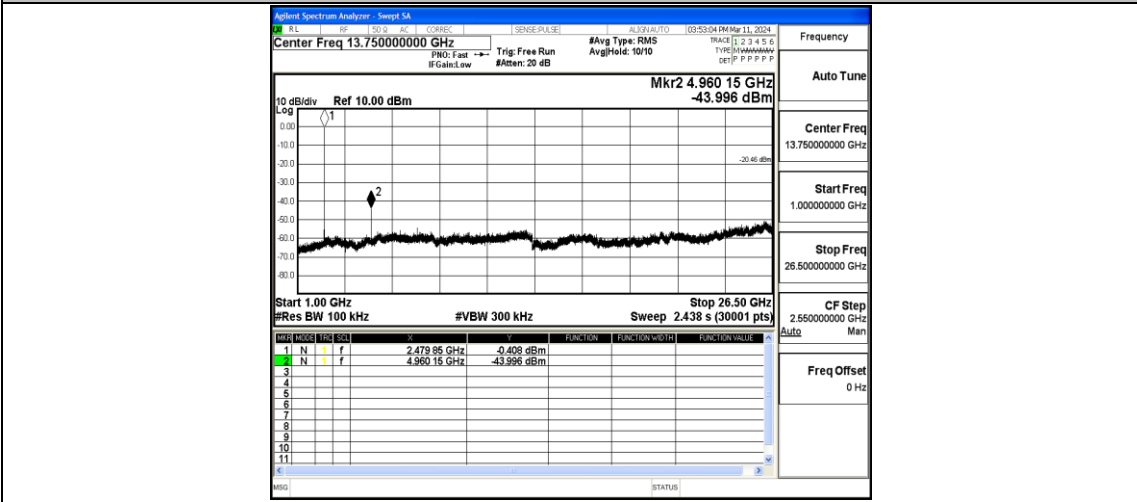
BLE_1M-Ant1-2440-1000~26500-PASS



BLE_1M-Ant1-2480-0~Reference-PASS



BLE_1M-Ant1-2480-30~1000-PASS



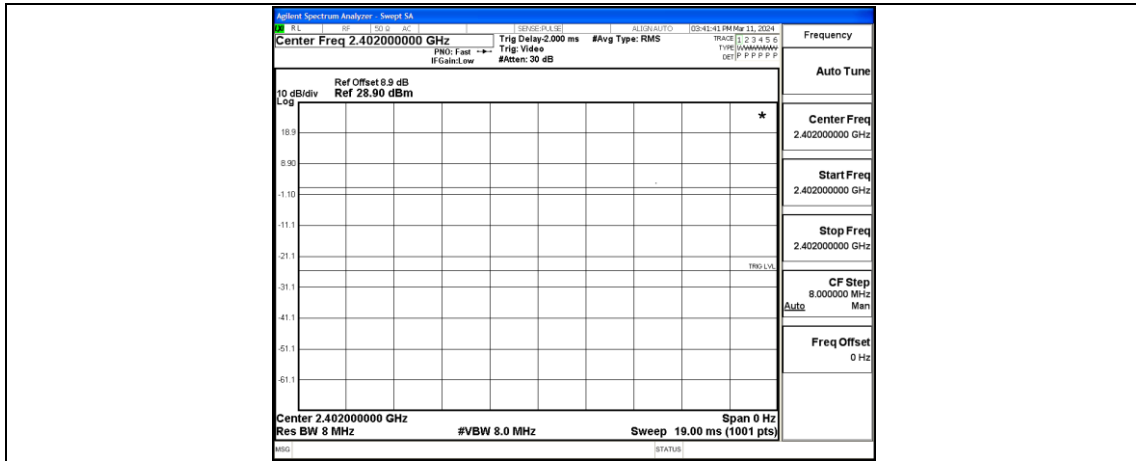
BLE_1M-Ant1-2480-1000~26500-PASS

Appendix G: Duty Cycle

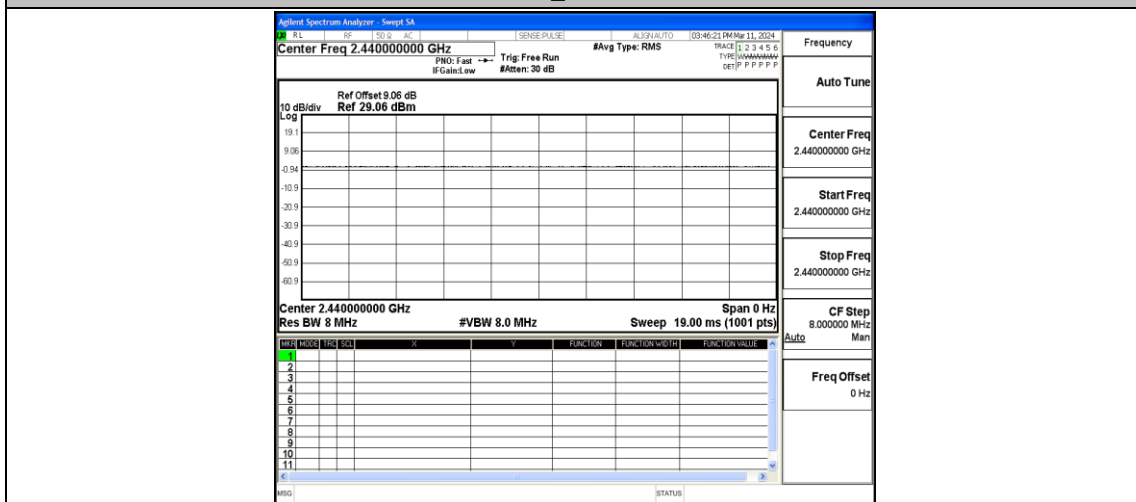
Test Result

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

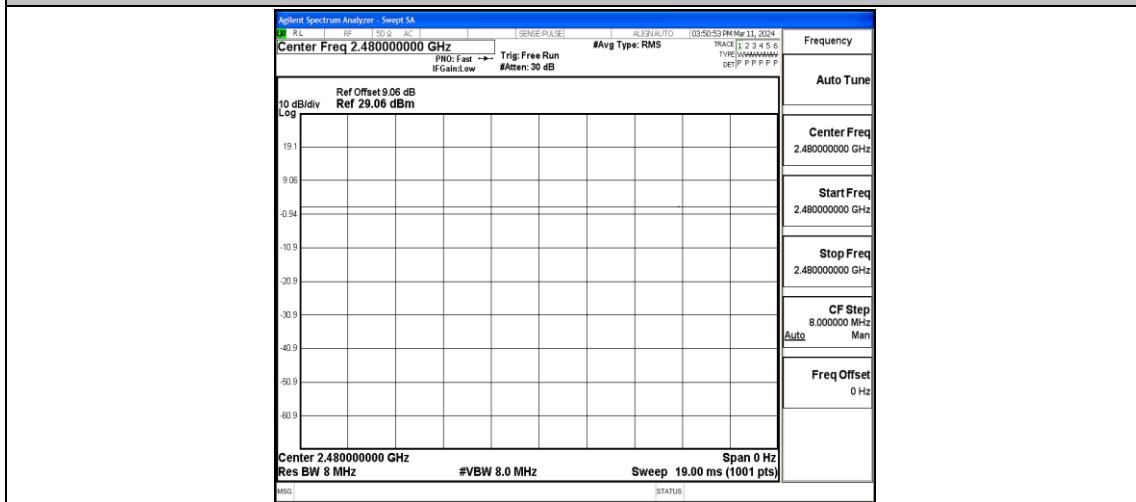
Test Graphs



NTNV-BLE_1M-Ant1-2402



NTNV-BLE_1M-Ant1-2440



NTNV-BLE_1M-Ant1-2480

Appendix H: Emissions in Restricted Bands

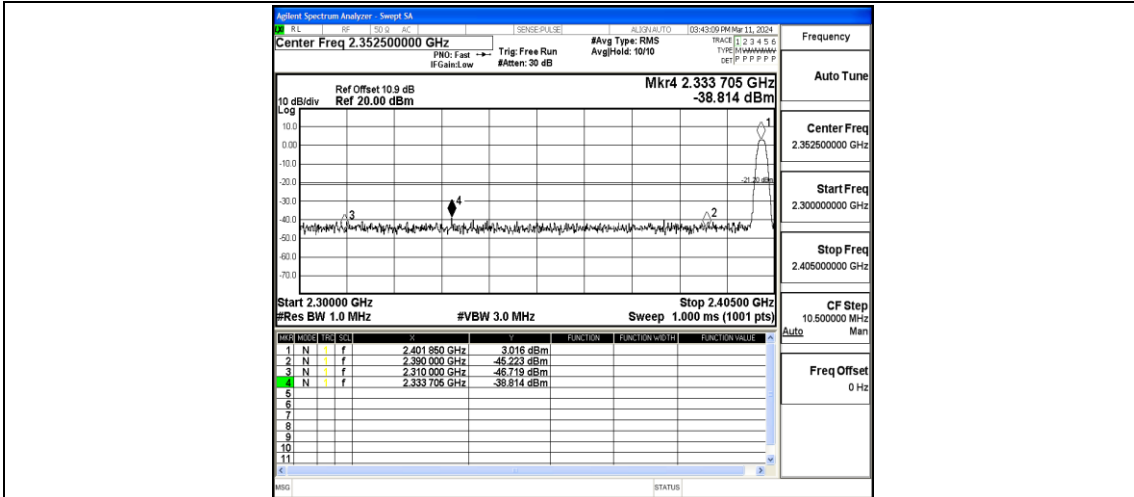
Test Result

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	-45.22	≤-21.20	49.98	≤74	PASS
BLE_1M	Ant1	Low	2402	Peak	2310.000	-46.72	≤-21.20	48.48	≤74	PASS
BLE_1M	Ant1	Low	2402	Peak	2333.705	-38.81	≤-21.20	56.39	≤74	PASS
BLE_1M	Ant1	Low	2402	AV	2390.000	-50.05	≤-41.20	45.15	≤54	PASS
BLE_1M	Ant1	Low	2402	AV	2310.000	-50.55	≤-41.20	44.65	≤54	PASS
BLE_1M	Ant1	Low	2402	AV	2374.235	-49.61	≤-41.20	45.59	≤54	PASS
BLE_1M	Ant1	High	2480	Peak	2483.500	-44.48	≤-21.20	50.72	≤74	PASS
BLE_1M	Ant1	High	2480	Peak	2500.000	-42.85	≤-21.20	52.35	≤74	PASS
BLE_1M	Ant1	High	2480	Peak	2497.280	-41.18	≤-21.20	54.02	≤74	PASS
BLE_1M	Ant1	High	2480	AV	2483.500	-49.29	≤-41.20	45.91	≤54	PASS
BLE_1M	Ant1	High	2480	AV	2500.000	-49.39	≤-41.20	45.81	≤54	PASS
BLE_1M	Ant1	High	2480	AV	2498.480	-48.88	≤-41.20	46.32	≤54	PASS

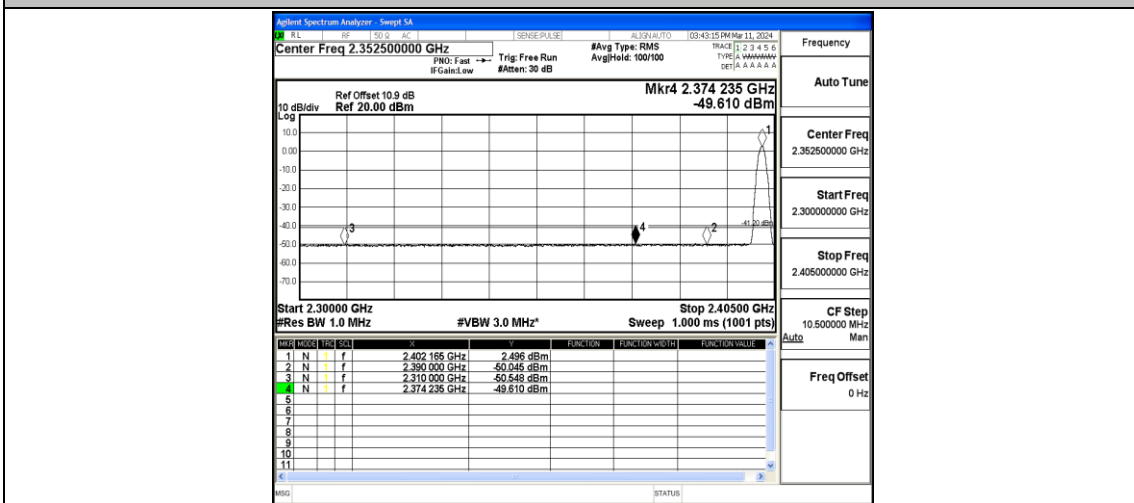
Note:

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.

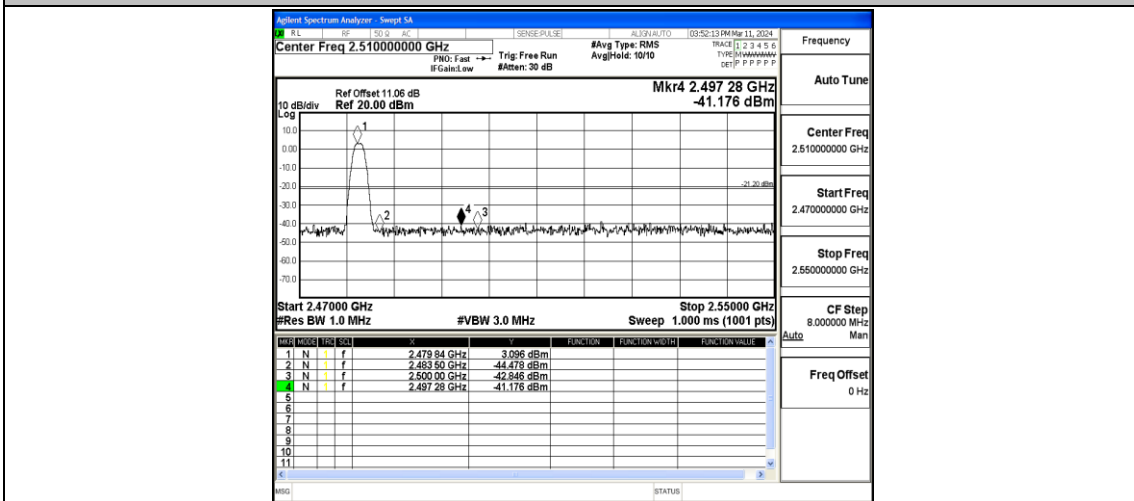
Test Graphs



BLE_1M-Ant1-240-PASS



BLE_1M-Ant1-240-PASS



BLE_1M-Ant1-2480-PASS

