Appendix Test Data for BLE (Conducted Measurement)

Product Name: RGB CONTROLLER

Trade Mark: AQUATIC AV

Test Model: RG155

FCC ID: WBQRG15X

Environmental Conditions

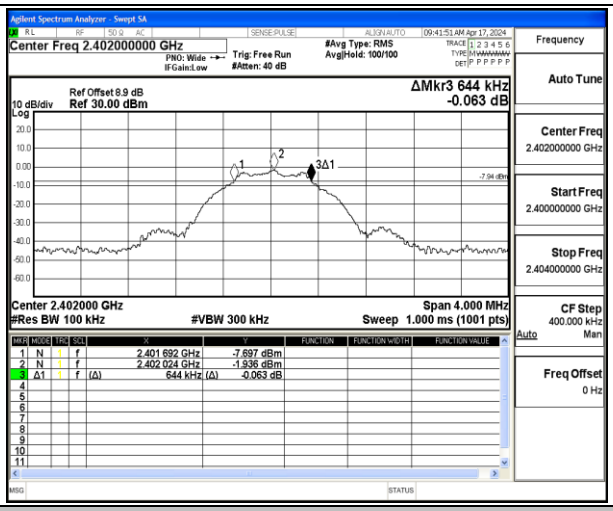
Temperature:	22.8° C
Relative Humidity:	56%
ATM Pressure:	100.0 kPa
Test Engineer:	Anna Hu
Supervised by:	Hugo Chen
NOTE	N/A

Appendix A: DTS Bandwidth

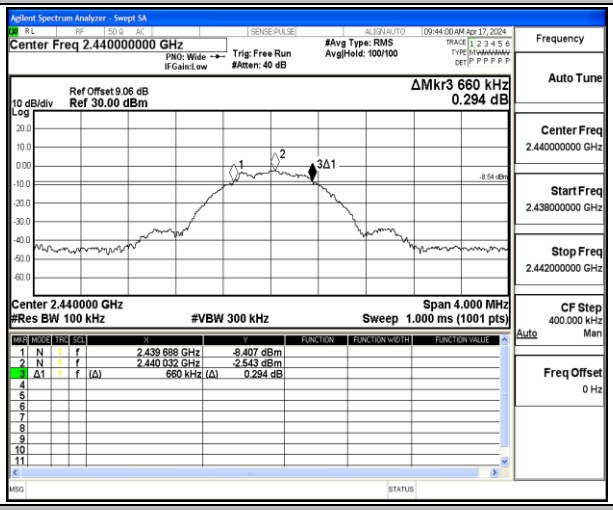
Test Result

TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.644	2401.692	2402.336	0.5	PASS
BLE_1M	Ant1	2440	0.660	2439.688	2440.348	0.5	PASS
BLE_1M	Ant1	2480	0.660	2479.684	2480.344	0.5	PASS

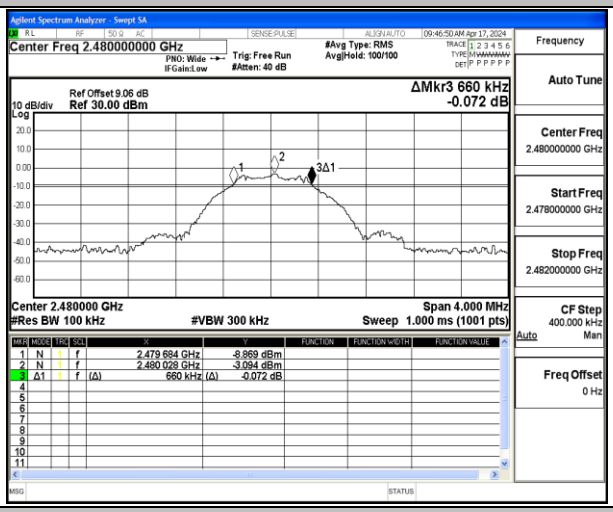
Test Graphs



BLE_1M-Ant1-2402-PASS



BLE_1M-Ant1-2440-PASS



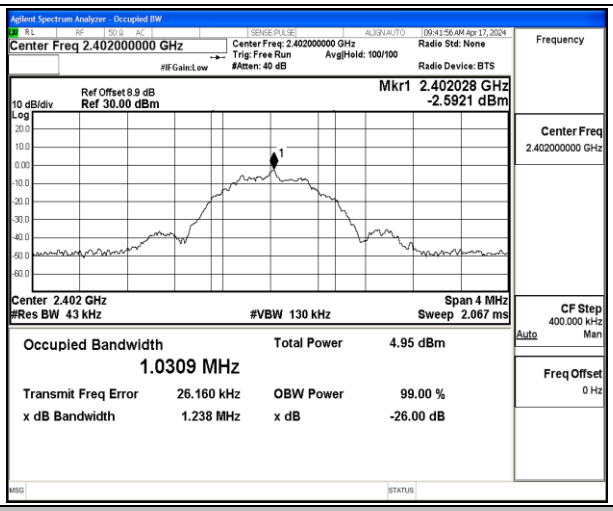
BLE_1M-Ant1-2480-PASS

Appendix B: Occupied Channel Bandwidth

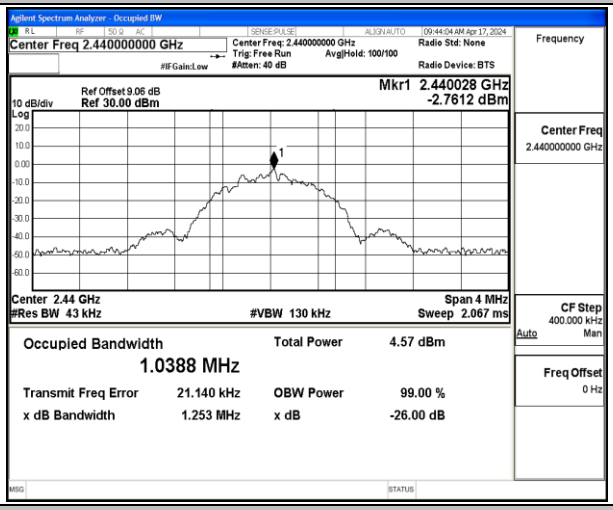
Test Result

TestMode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0309	2401.5107	2402.5416	---	---
BLE_1M	Ant1	2440	1.0388	2439.5017	2440.5405	---	---
BLE_1M	Ant1	2480	1.0359	2479.5082	2480.5441	---	---

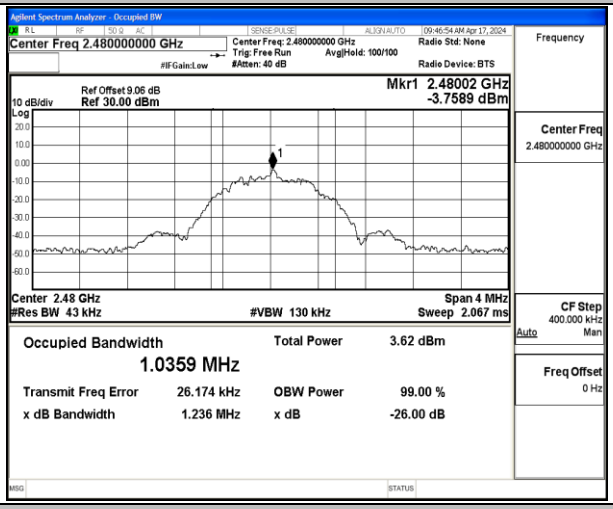
Test Graphs



BLE_1M-Ant1-2402



BLE_1M-Ant1-2440



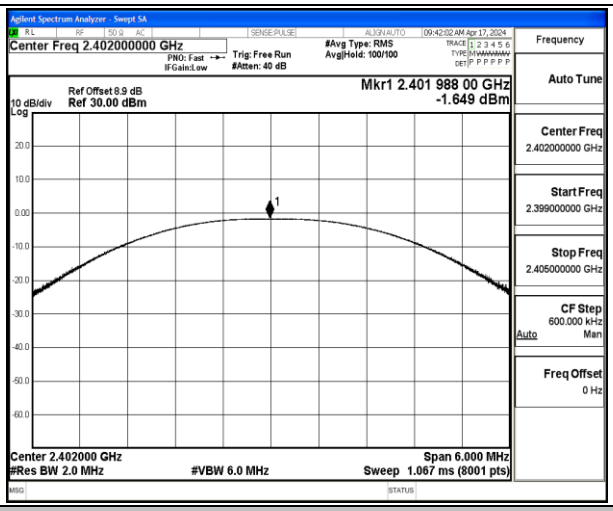
BLE_1M-Ant1-2480

Appendix C: Maximum peak conducted output power

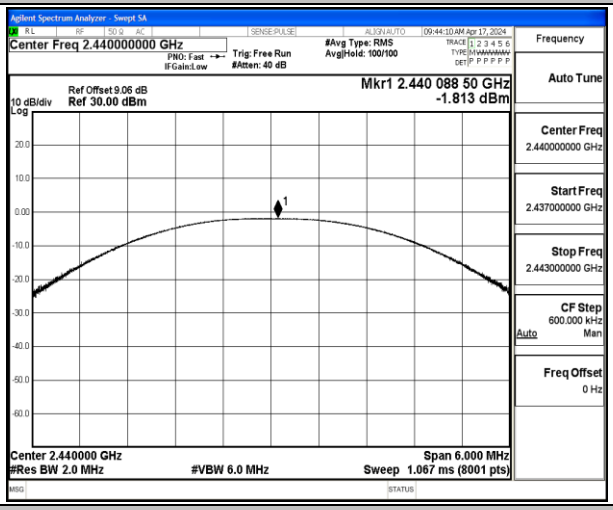
Test Result Peak

TestMode	Antenna	Frequency[MHz]	Conducted Peak Powert[dBm]	Conducted Limit[dBm]	Verdict
BLE_1M	Ant1	2402	-1.65	≤30	PASS
BLE_1M	Ant1	2440	-1.81	≤30	PASS
BLE_1M	Ant1	2480	-2.73	≤30	PASS

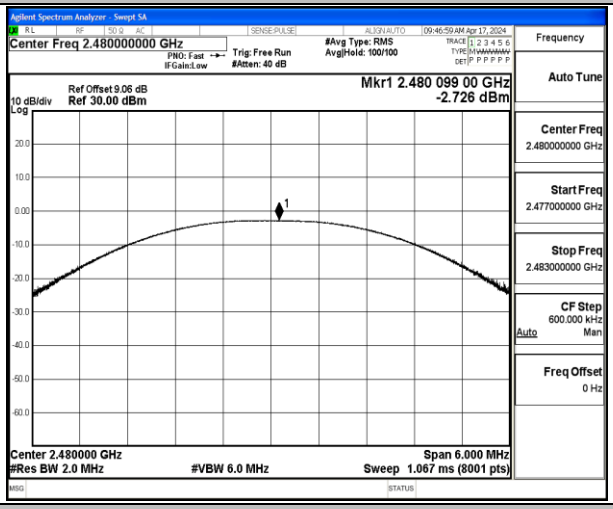
Test Graphs Peak



BLE_1M-Ant1-2402-PASS



BLE_1M-Ant1-2440-PASS



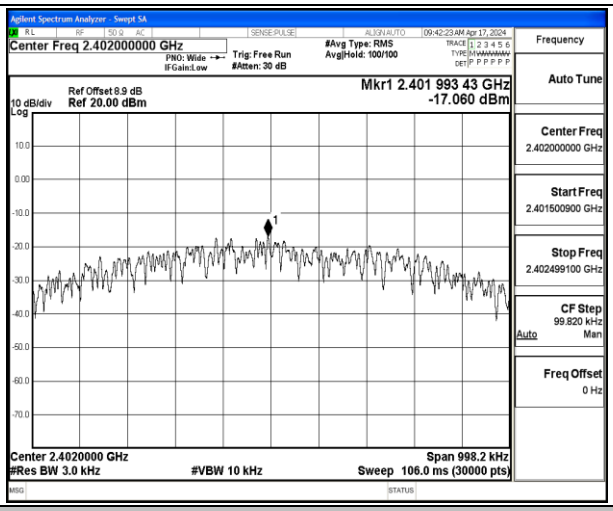
BLE_1M-Ant1-2480-PASS

Appendix D: Maximum peak power spectral density

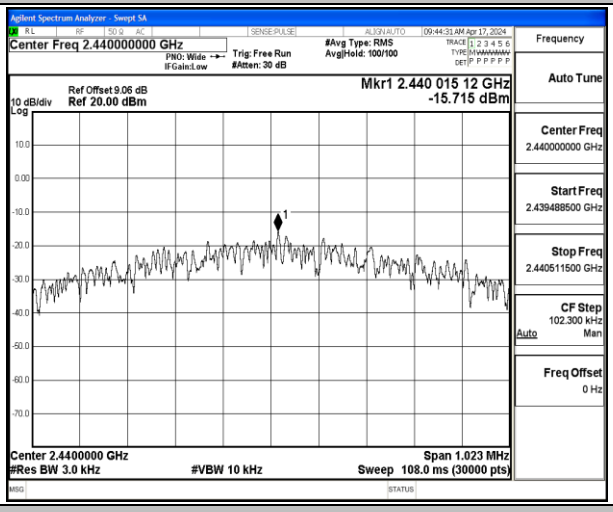
Test Result

TestMode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-17.06	≤8.00	PASS
BLE_1M	Ant1	2440	-15.72	≤8.00	PASS
BLE_1M	Ant1	2480	-18.25	≤8.00	PASS

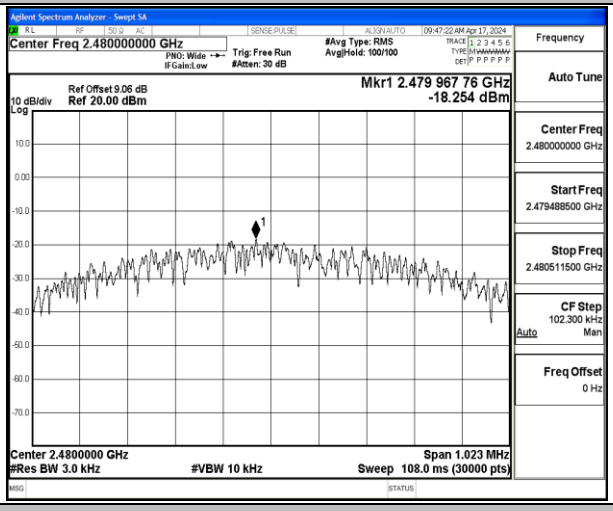
Test Graphs



BLE_1M-Ant1-2402-PASS



BLE_1M-Ant1-2440-PASS



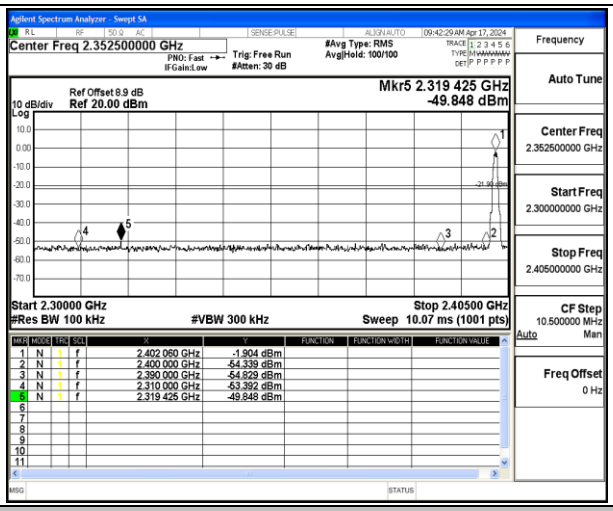
BLE_1M-Ant1-2480-PASS

Appendix E: Band edge measurements

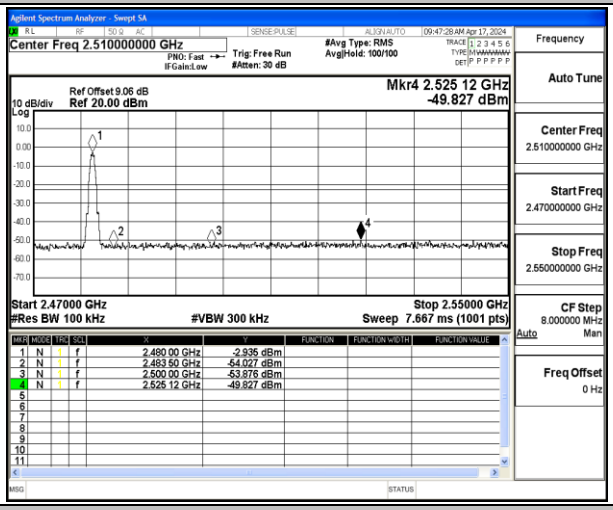
Test Result

TestMode	Antenna	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	-1.90	-49.85	≤-21.9	PASS
BLE_1M	Ant1	High	2480	-2.94	-49.83	≤-22.94	PASS

Test Graphs



BLE_1M-Ant1-2402-PASS



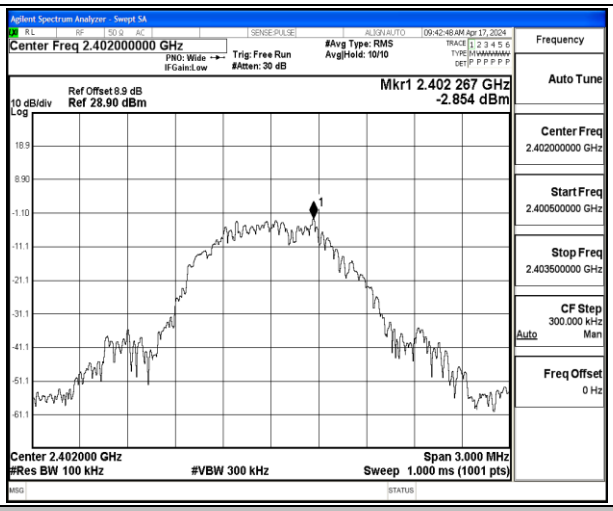
BLE_1M-Ant1-2480-PASS

Appendix F: Conducted Spurious Emission

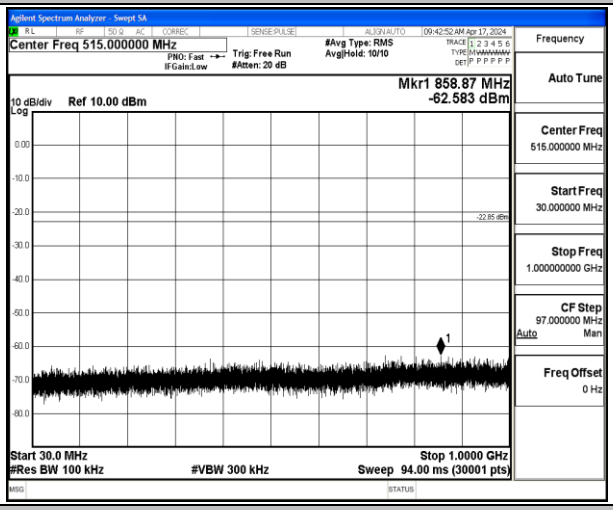
Test Result

TestMode	Antenna	Frequency[MHz]	FreqRange[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	0~Reference	-2.85	-2.85	---	PASS
BLE_1M	Ant1	2402	30~1000	-2.85	-62.58	≤-22.85	PASS
BLE_1M	Ant1	2402	1000~26500	-2.85	-34.78	≤-22.85	PASS
BLE_1M	Ant1	2440	0~Reference	-2.56	-2.56	---	PASS
BLE_1M	Ant1	2440	30~1000	-2.56	-63.13	≤-22.56	PASS
BLE_1M	Ant1	2440	1000~26500	-2.56	-49.75	≤-22.56	PASS
BLE_1M	Ant1	2480	0~Reference	-4.03	-4.03	---	PASS
BLE_1M	Ant1	2480	30~1000	-4.03	-62.41	≤-24.03	PASS
BLE_1M	Ant1	2480	1000~26500	-4.03	-50.37	≤-24.03	PASS

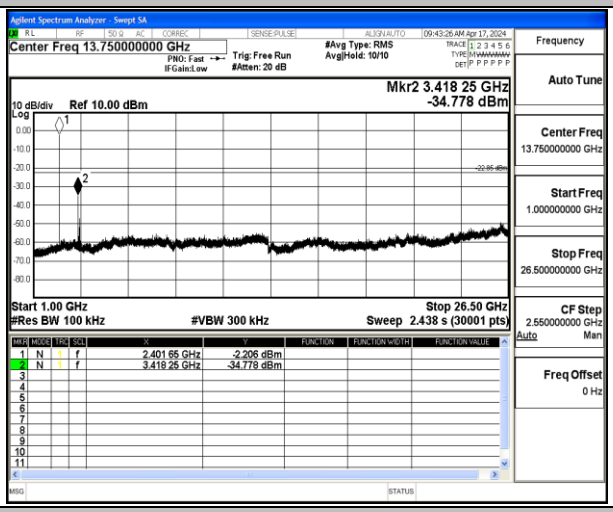
Test Graphs



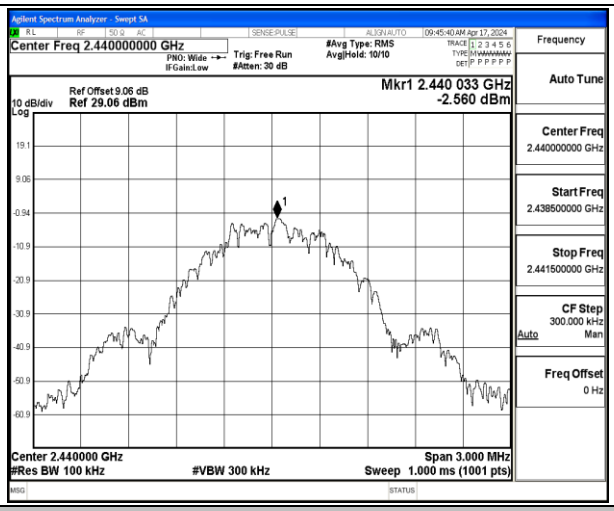
BLE_1M-Ant1-2402-0~Reference-PASS



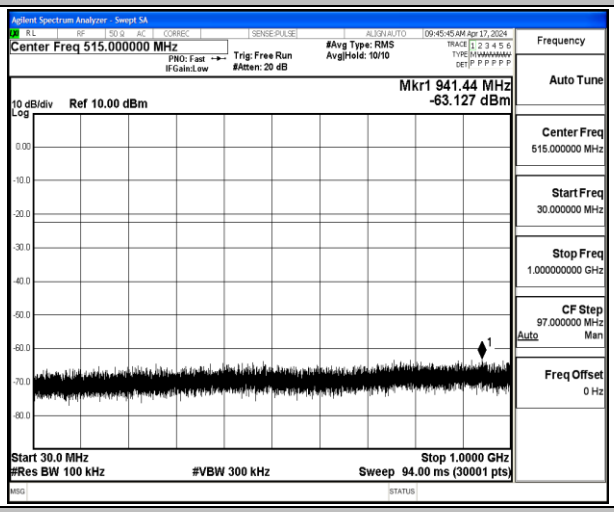
BLE_1M-Ant1-2402-30~1000-PASS



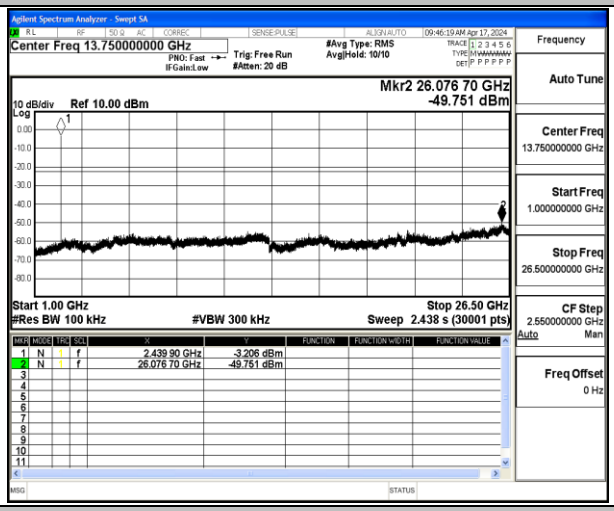
BLE_1M-Ant1-2402-1000~26500-PASS



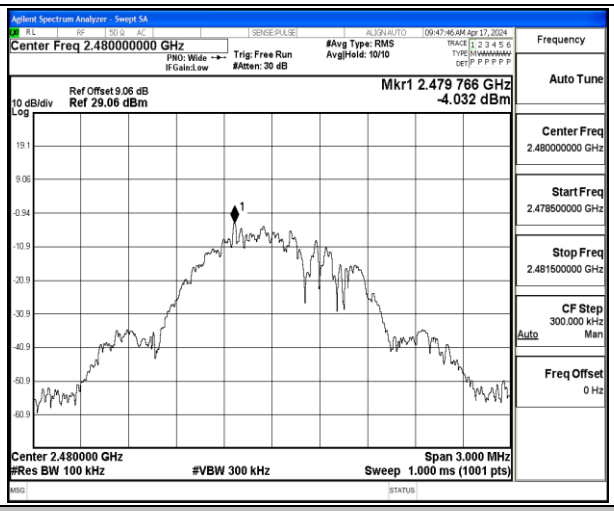
BLE_1M-Ant1-2440-0~Reference-PASS



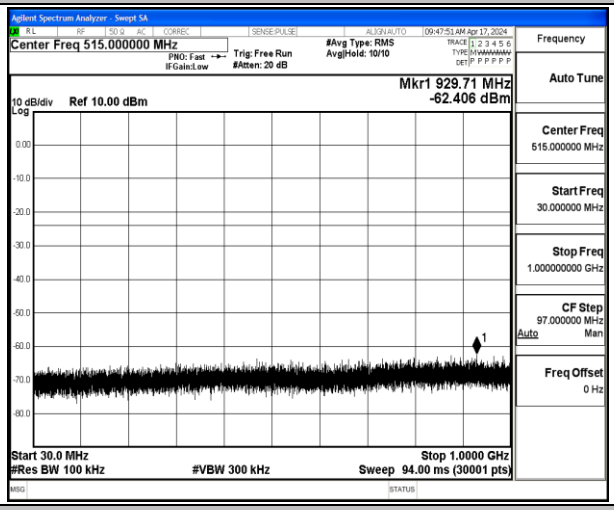
BLE_1M-Ant1-2440-30~1000-PASS



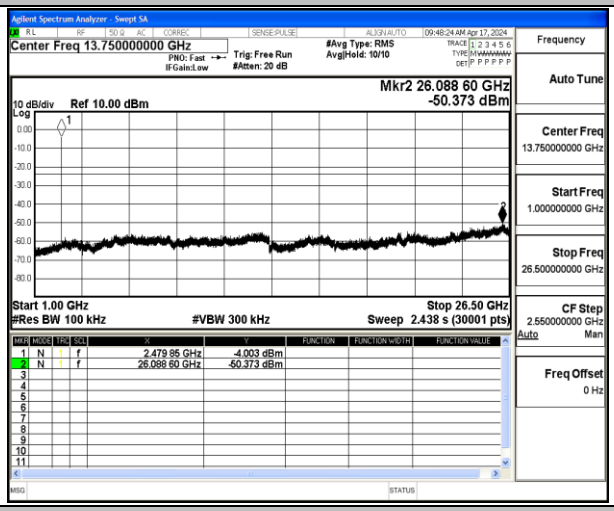
BLE_1M-Ant1-2440-1000~26500-PASS



BLE_1M-Ant1-2480-0~Reference-PASS



BLE_1M-Ant1-2480-30~1000-PASS



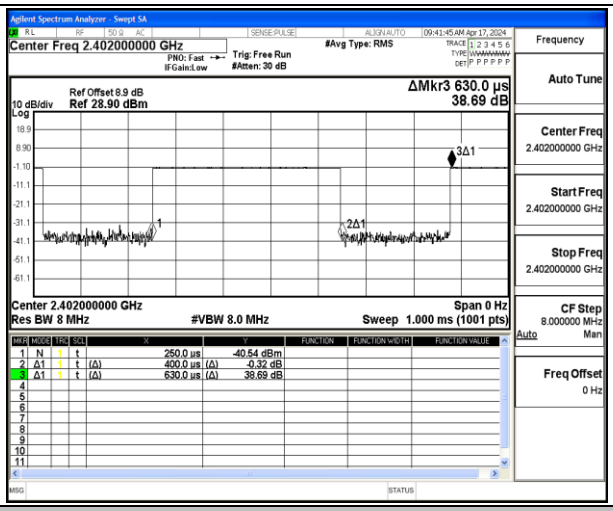
BLE_1M-Ant1-2480-1000~26500-PASS

Appendix G: Duty Cycle

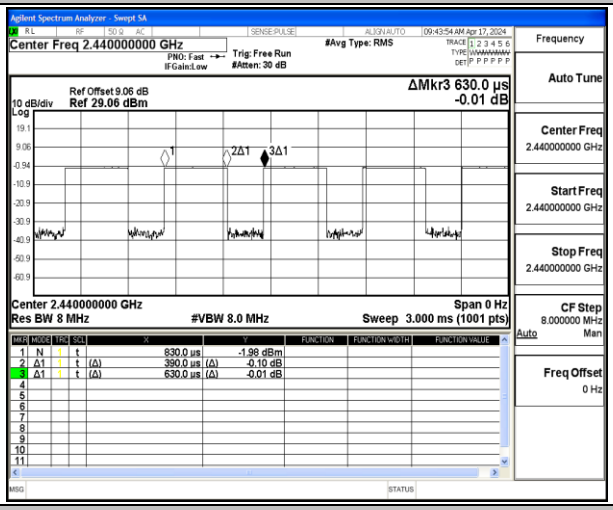
Test Result

TestMode	Antenna	Frequency[MHz]	ON Time [ms]	Period [ms]	Duty Cycle [%]	Duty Cycle Factor[dB]
BLE_1M	Ant1	2402	0.40	0.63	63.49	1.97
BLE_1M	Ant1	2440	0.39	0.63	61.90	2.08
BLE_1M	Ant1	2480	0.40	0.63	63.49	1.97

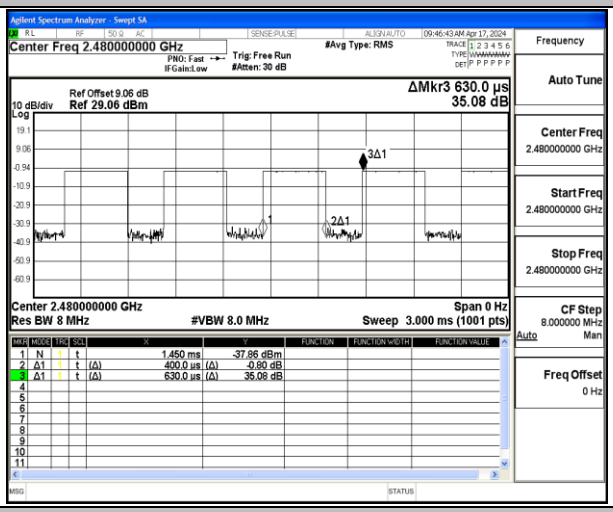
Test Graphs



NTNV-BLE_1M-Ant1-2402



NTNV-BLE_1M-Ant1-2440



NTNV-BLE_1M-Ant1-2480

Appendix H: Emissions in Restricted Bands

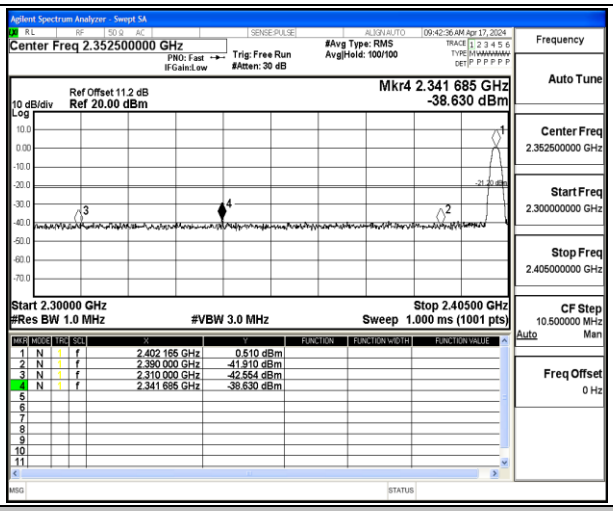
Test Result

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	-41.91	≤-21.20	53.29	≤74	PASS
BLE_1M	Ant1	Low	2402	Peak	2310.000	-42.55	≤-21.20	52.65	≤74	PASS
BLE_1M	Ant1	Low	2402	Peak	2341.685	-38.63	≤-21.20	56.57	≤74	PASS
BLE_1M	Ant1	Low	2402	AV	2390.000	-47.58	≤-41.20	47.62	≤54	PASS
BLE_1M	Ant1	Low	2402	AV	2310.000	-47.79	≤-41.20	47.41	≤54	PASS
BLE_1M	Ant1	Low	2402	AV	2379.275	-47.16	≤-41.20	48.04	≤54	PASS
BLE_1M	Ant1	High	2480	Peak	2483.500	-42.3	≤-21.20	52.90	≤74	PASS
BLE_1M	Ant1	High	2480	Peak	2500.000	-41.56	≤-21.20	53.64	≤74	PASS
BLE_1M	Ant1	High	2480	Peak	2493.040	-38.56	≤-21.20	56.64	≤74	PASS
BLE_1M	Ant1	High	2480	AV	2483.500	-47.05	≤-41.20	48.15	≤54	PASS
BLE_1M	Ant1	High	2480	AV	2500.000	-46.94	≤-41.20	48.26	≤54	PASS
BLE_1M	Ant1	High	2480	AV	2498.400	-46.47	≤-41.20	48.73	≤54	PASS

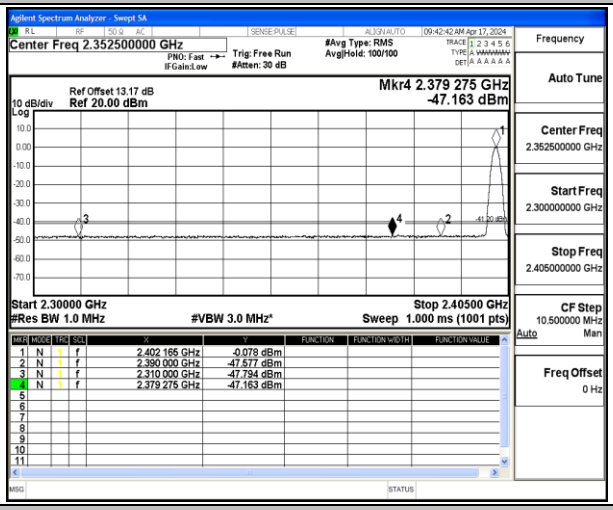
Note：

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.

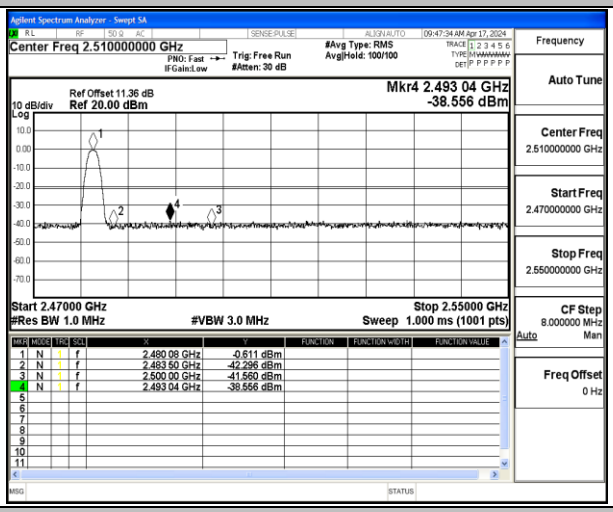
Test Graphs



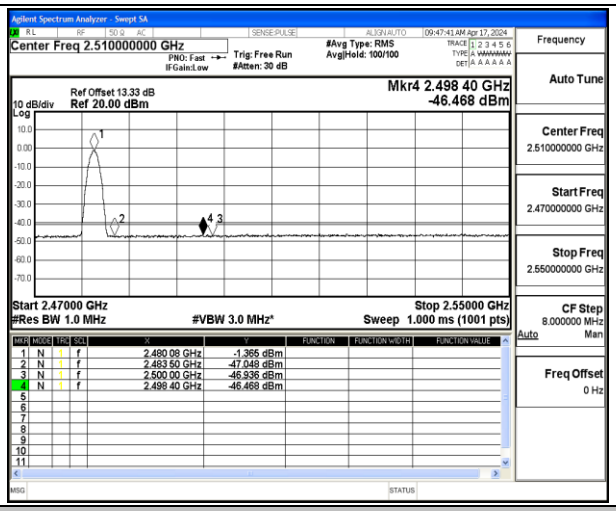
BLE_1M-Ant1-2402-PASS



BLE_1M-Ant1-2402-PASS



BLE_1M-Ant1-2480-PASS



BLE_1M-Ant1-2480-PASS