Appendix Test Data for BT(BLE) (Conducted Measurement)

Product Name: Projector

Trade Mark: Aandz

Test Model: M1

FCC ID: 2BAWM-M1

Environmental Conditions

Temperature:	25.5°C
Relative Humidity:	55%
ATM Pressure:	100.0 kPa
Test Engineer:	Anna Hu
Supervised by:	Hugo Chen
NOTE	N/A

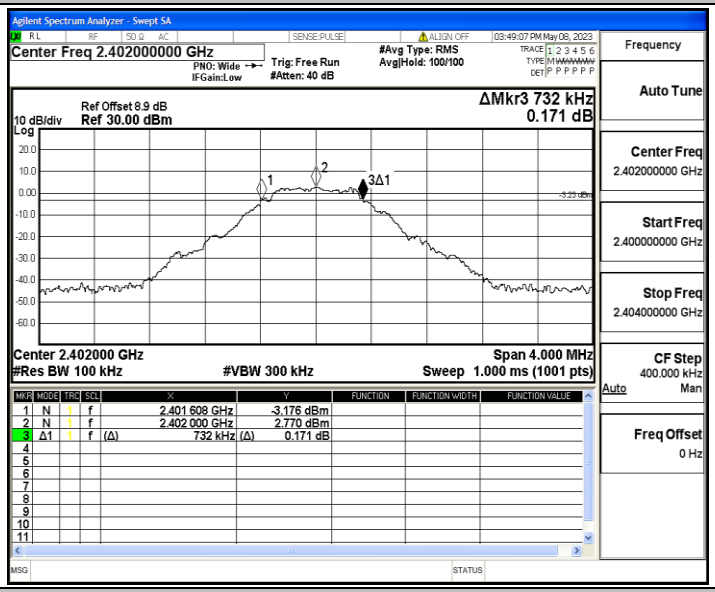
Appendix A: DTS Bandwidth

Test Result

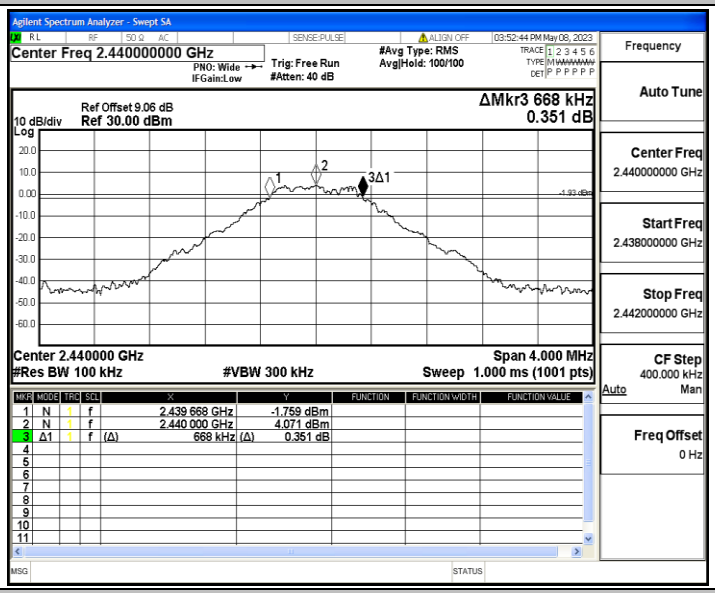
TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant0	2402	0.732	2401.608	2402.340	0.5	PASS
		2440	0.668	2439.668	2440.336	0.5	PASS
		2480	0.756	2479.620	2480.376	0.5	PASS
BLE_2M	Ant0	2402	1.156	2401.428	2402.584	0.5	PASS
		2440	1.232	2439.352	2440.584	0.5	PASS
		2480	1.152	2479.432	2480.584	0.5	PASS

Test Graphs

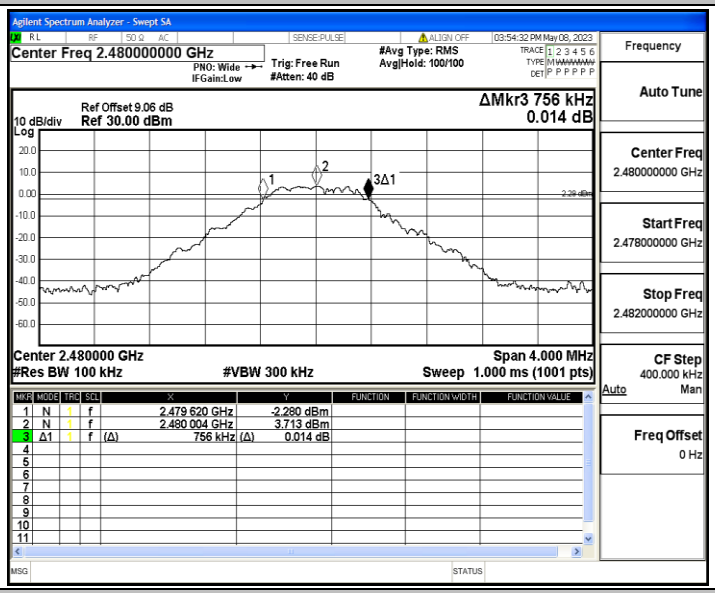
BLE_1M_Ant0_2402



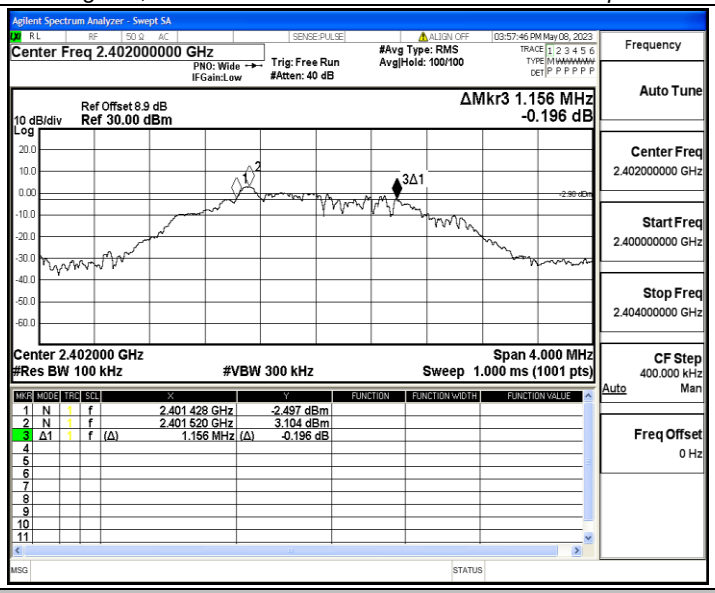
BLE_1M_Ant0_2440



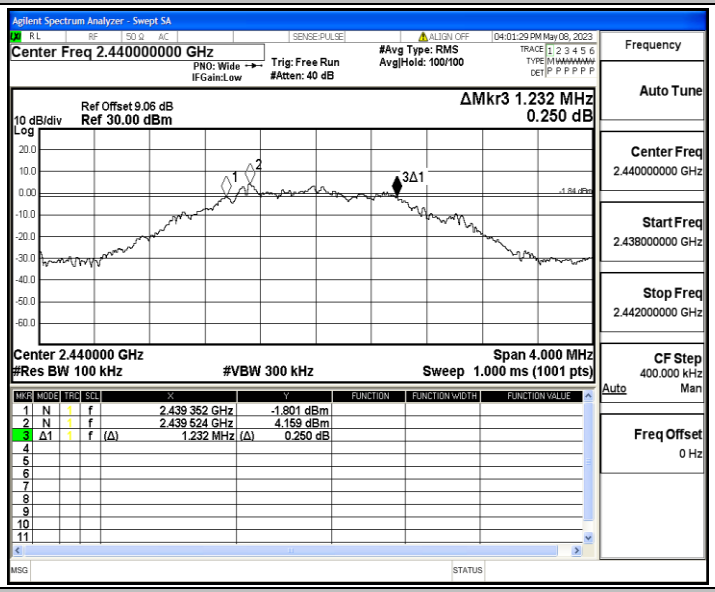
BLE_1M_Ant0_2480



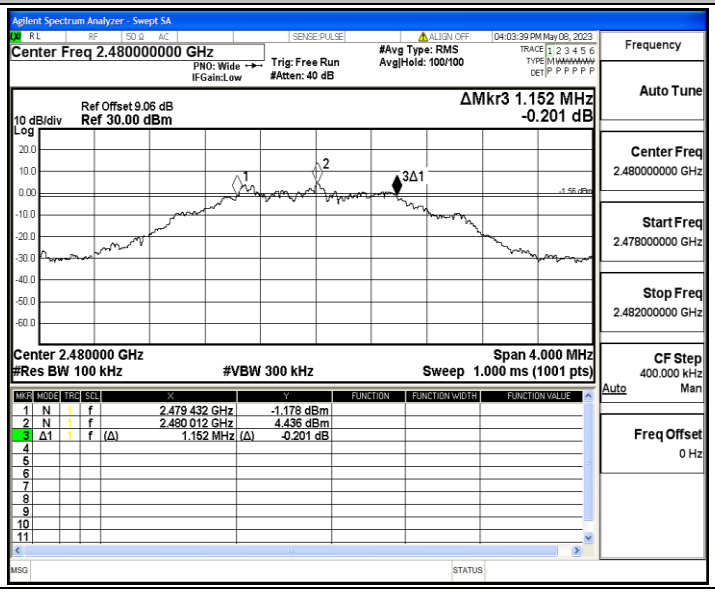
BLE_2M_Ant0_2402



BLE_2M_Ant0_2440



BLE_2M_Ant0_2480



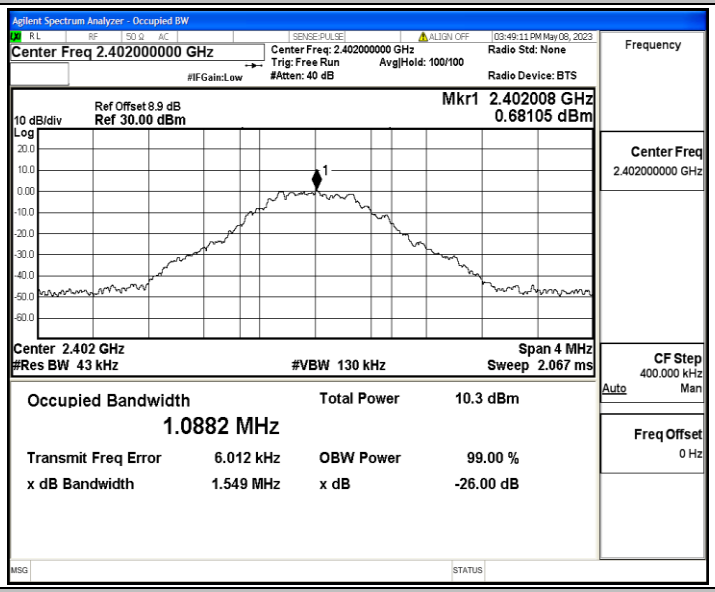
Appendix B: Occupied Channel Bandwidth

Test Result

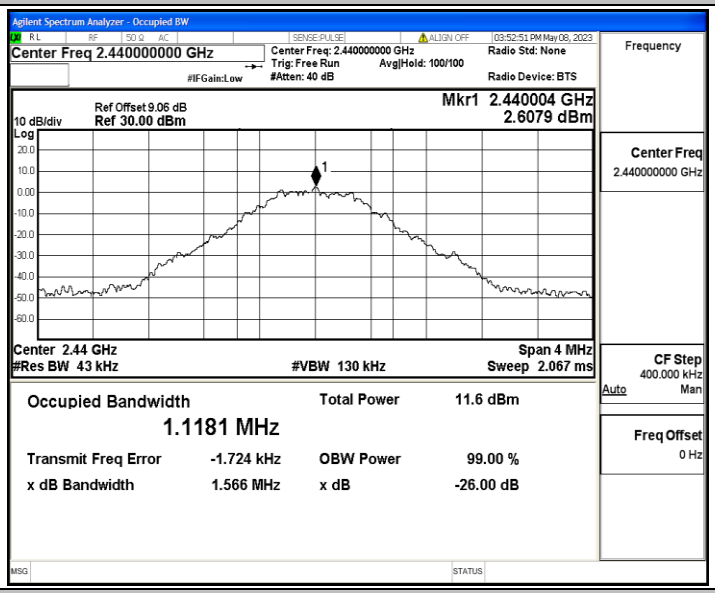
TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant0	2402	1.0882	2401.4619	2402.5501	---	---
		2440	1.1181	2439.4392	2440.5573	---	---
		2480	1.1502	2479.4181	2480.5683	---	---
BLE_2M	Ant0	2402	2.0836	2400.9708	2403.0544	---	---
		2440	2.0878	2438.9711	2441.0589	---	---
		2480	2.0807	2478.9762	2481.0569	---	---

Test Graphs

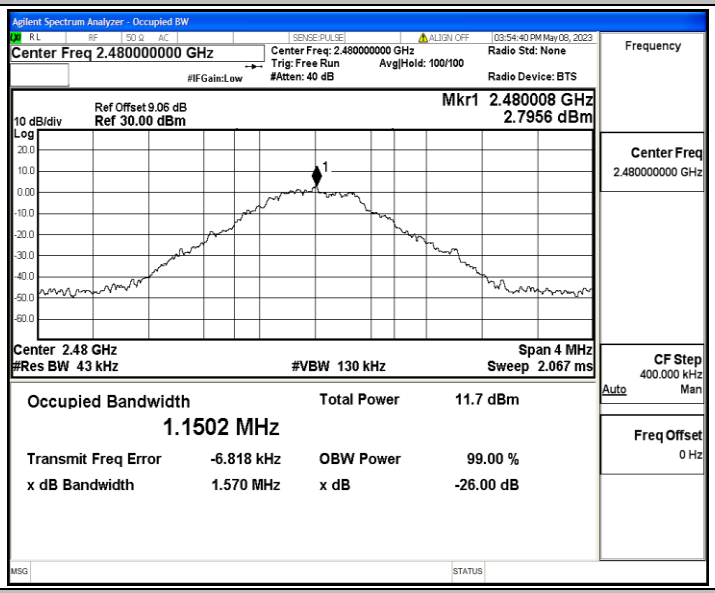
BLE_1M_Ant0_2402



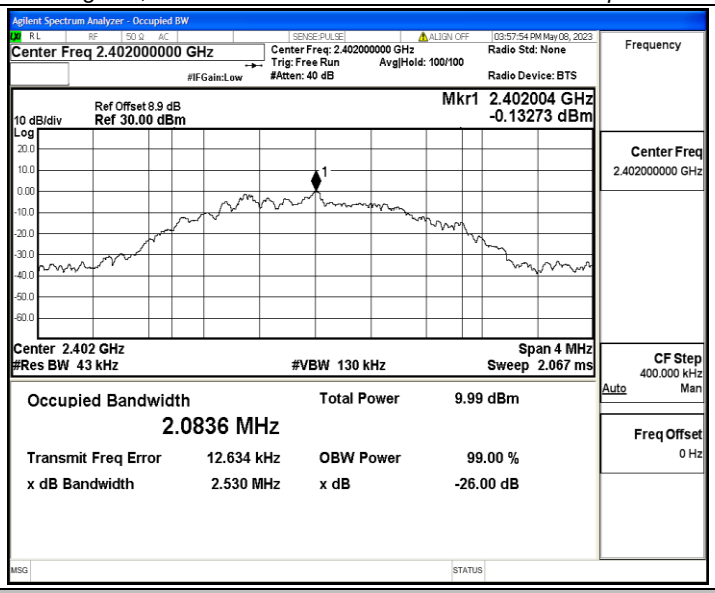
BLE_1M_Ant0_2440



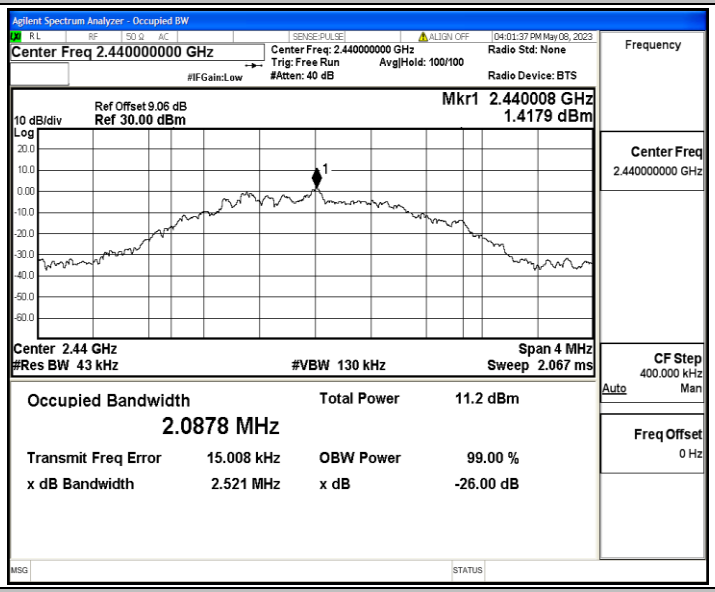
BLE_1M_Ant0_2480



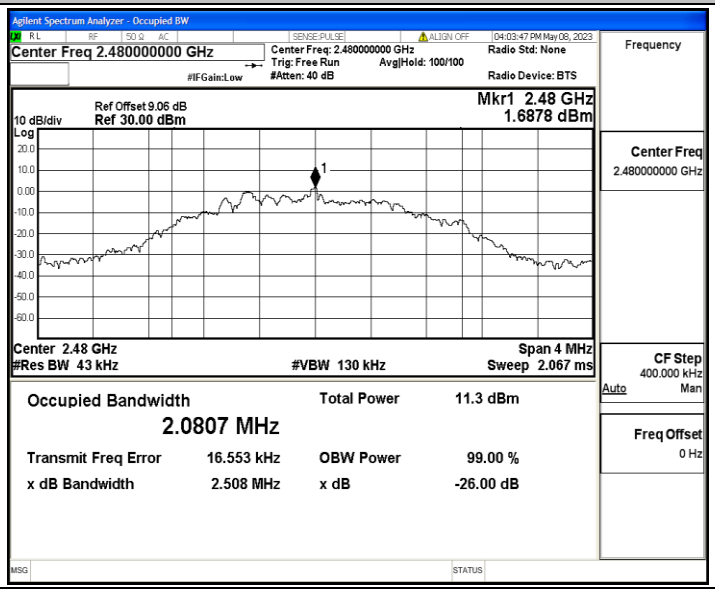
BLE_2M_Ant0_2402



BLE_2M_Ant0_2440



BLE_2M_Ant0_2480



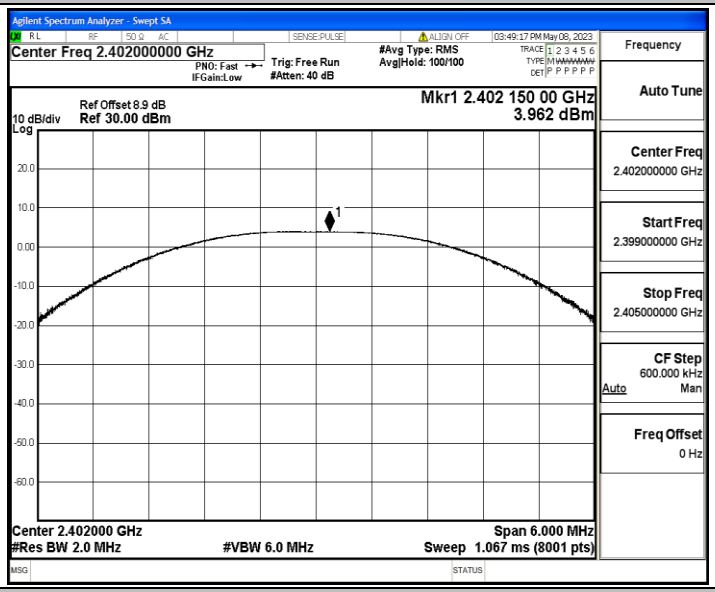
Appendix C: Maximum Peak conducted output power

Test Result

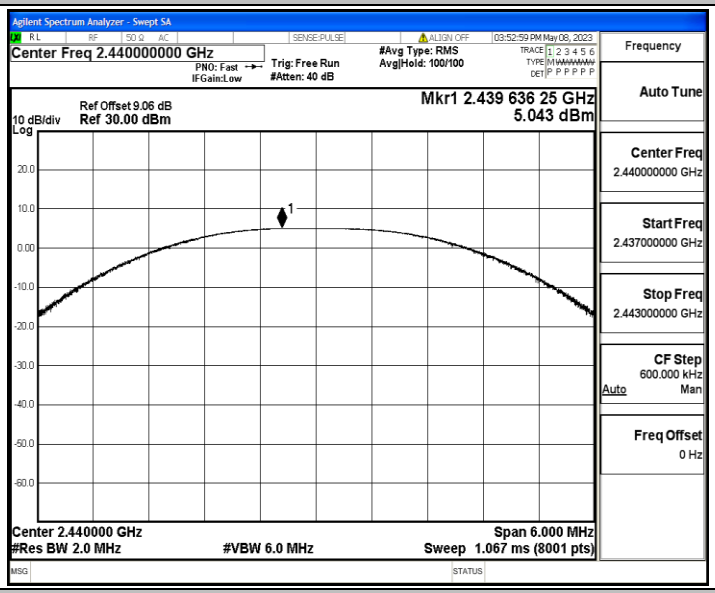
TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant0	2402	3.96	≤30	PASS
		2440	5.04	≤30	PASS
		2480	5.2	≤30	PASS
BLE_2M	Ant0	2402	4	≤30	PASS
		2440	5.11	≤30	PASS
		2480	5.26	≤30	PASS

Test Graphs

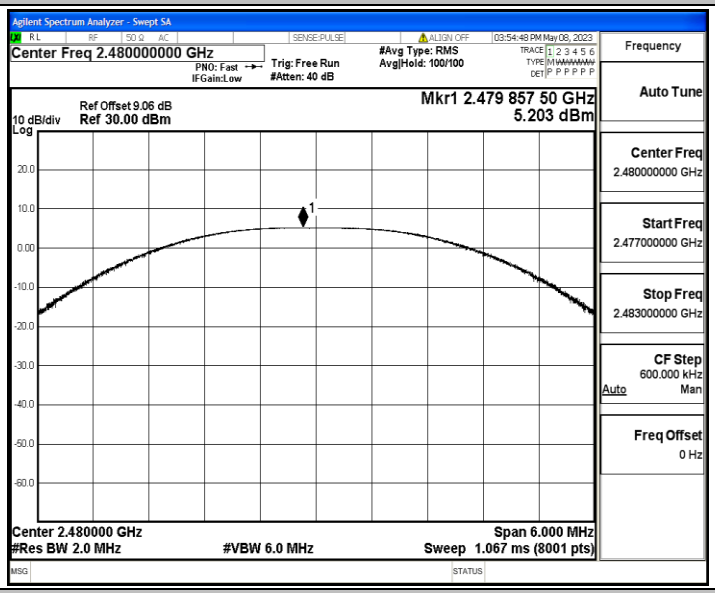
BLE_1M_Ant0_2402



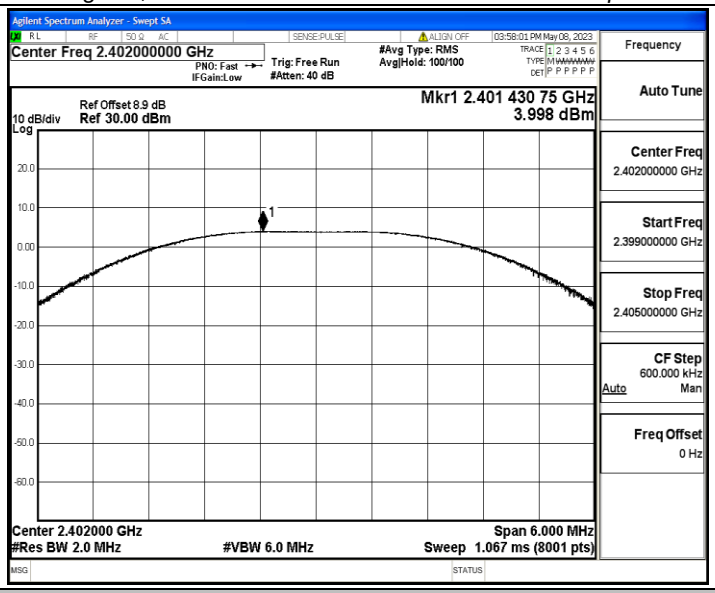
BLE_1M_Ant0_2440



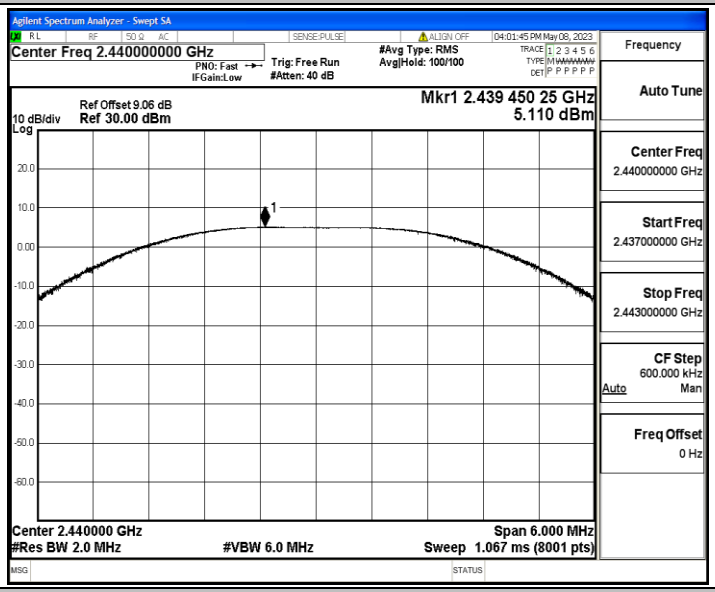
BLE_1M_Ant0_2480



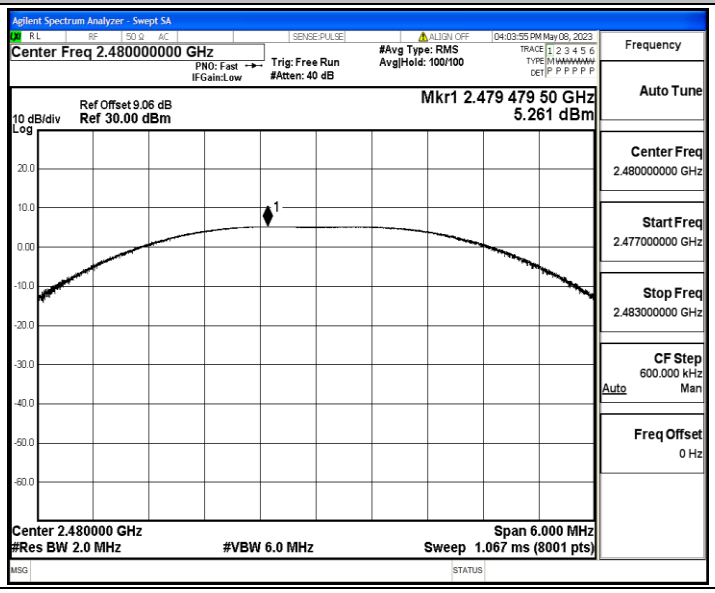
BLE_2M_Ant0_2402



BLE_2M_Ant0_2440



BLE_2M_Ant0_2480



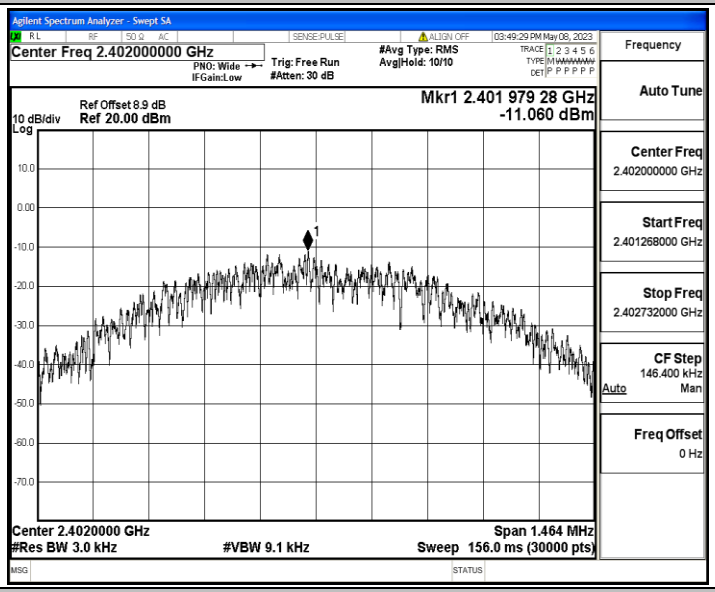
Appendix D: Maximum power spectral density

Test Result

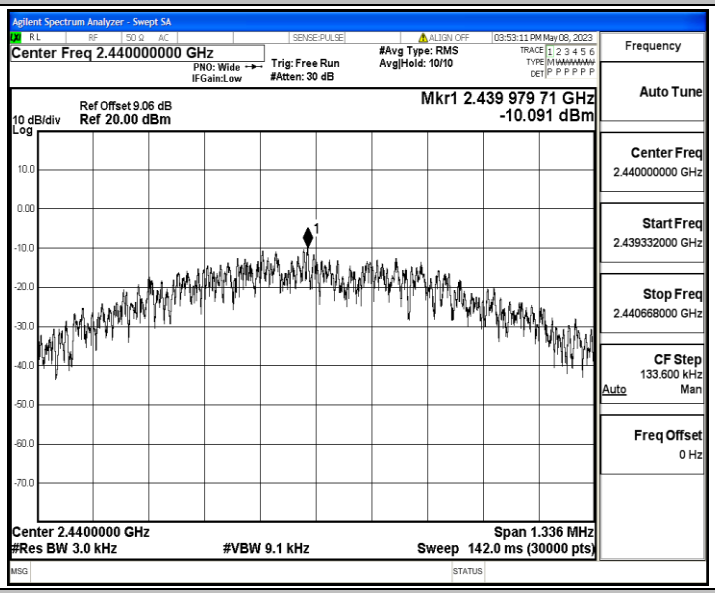
TestMode	Antenna	Channel	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant0	2402	-11.06	≤8.00	PASS
		2440	-10.09	≤8.00	PASS
		2480	-9.5	≤8.00	PASS
BLE_2M	Ant0	2402	-13.71	≤8.00	PASS
		2440	-12.54	≤8.00	PASS
		2480	-12.16	≤8.00	PASS

Test Graphs

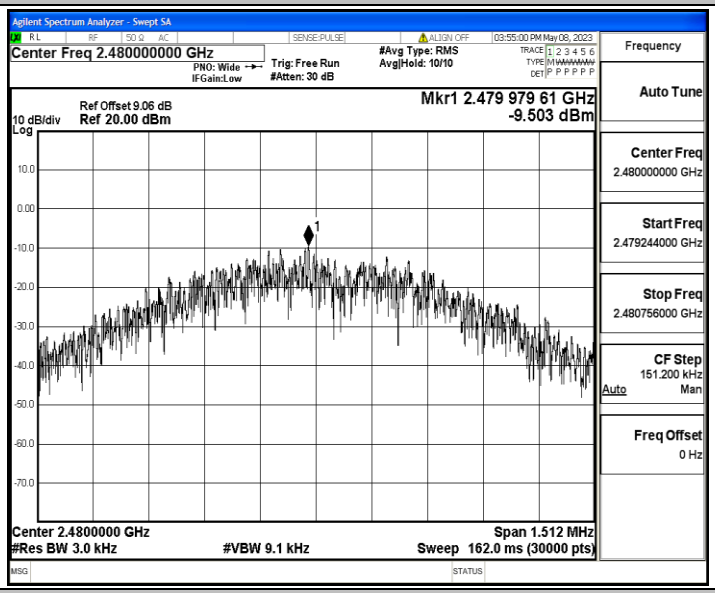
BLE_1M_Ant0_2402



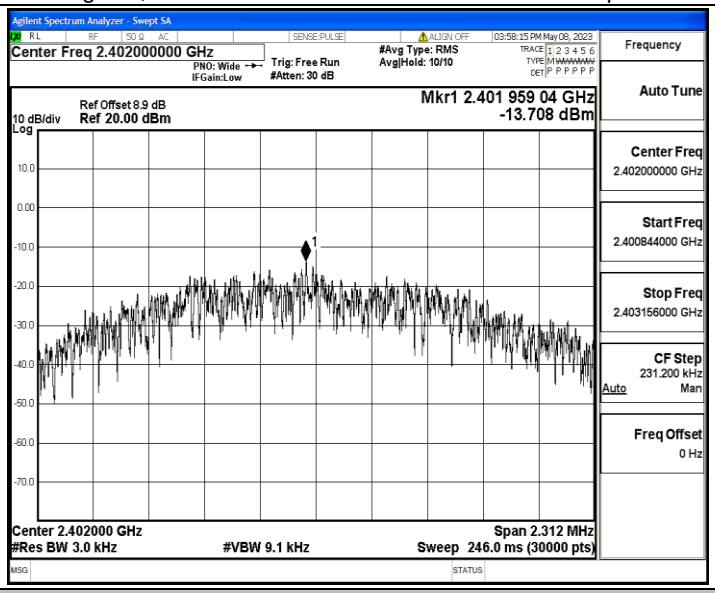
BLE_1M_Ant0_2440



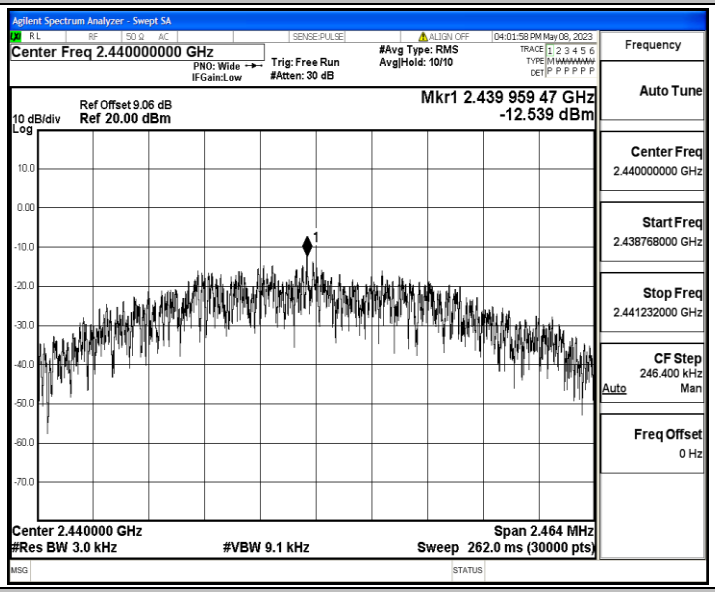
BLE_1M_Ant0_2480



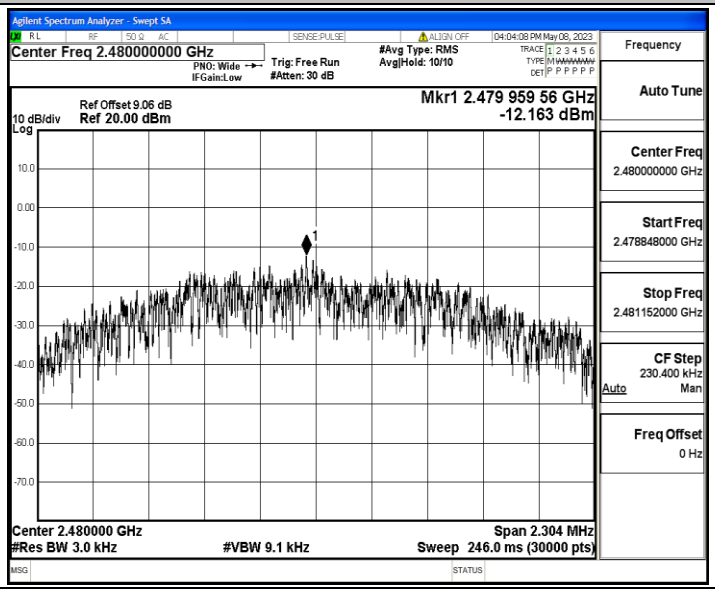
BLE_2M_Ant0_2402



BLE_2M_Ant0_2440



BLE_2M_Ant0_2480



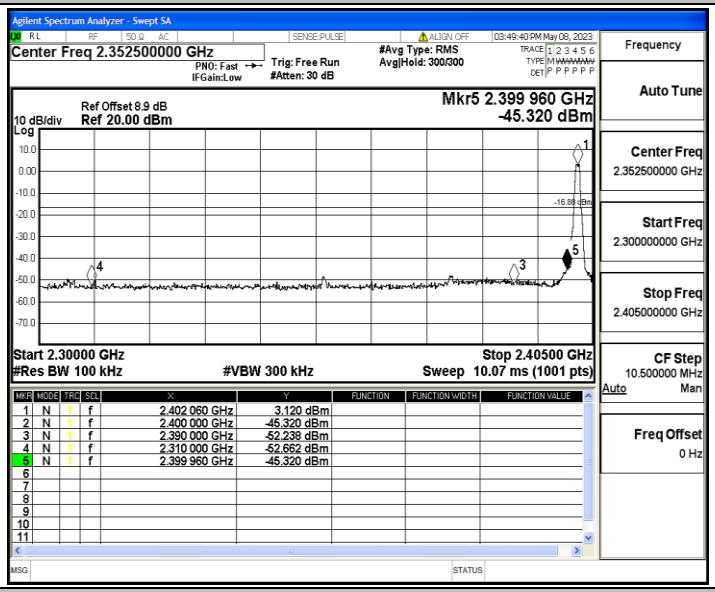
Appendix E: Band edge measurements

Test Result

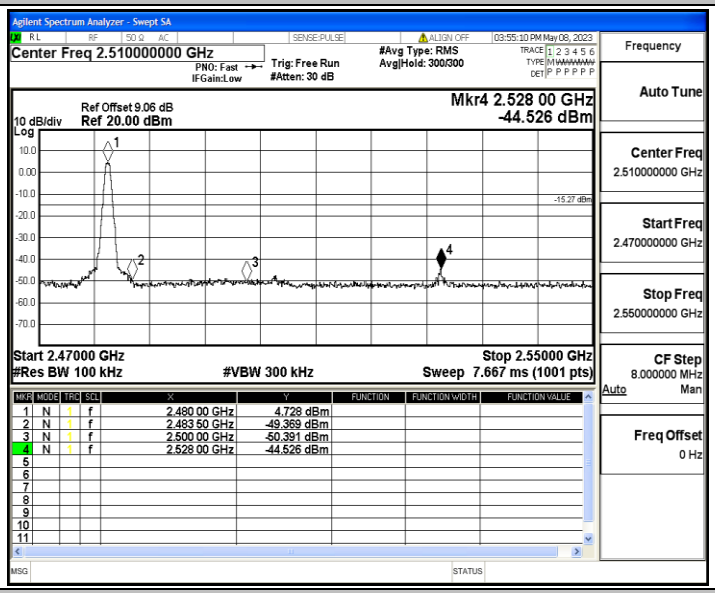
TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant0	Low	2402	3.12	-45.32	≤-16.88	PASS
		High	2480	4.73	-44.53	≤-15.27	PASS
BLE_2M	Ant0	Low	2402	3.14	-28.79	≤-16.86	PASS
		High	2480	4.74	-44.15	≤-15.26	PASS

Test Graphs

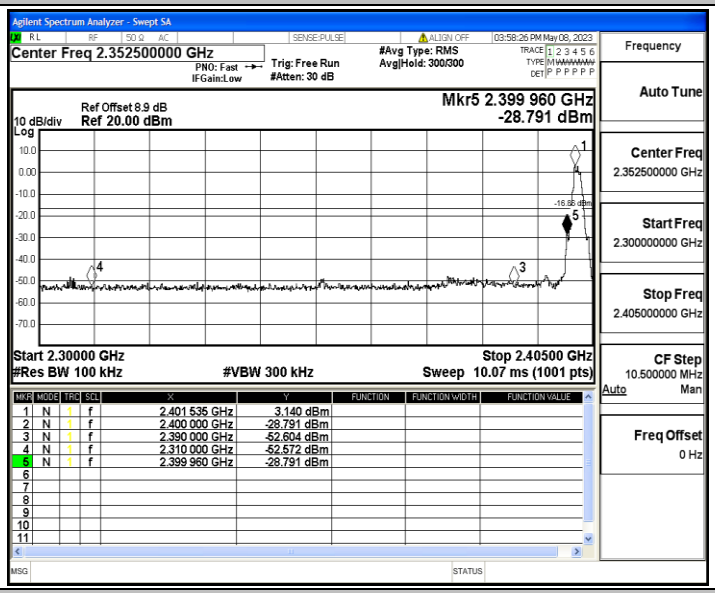
BLE_1M_Ant0_Low_2402



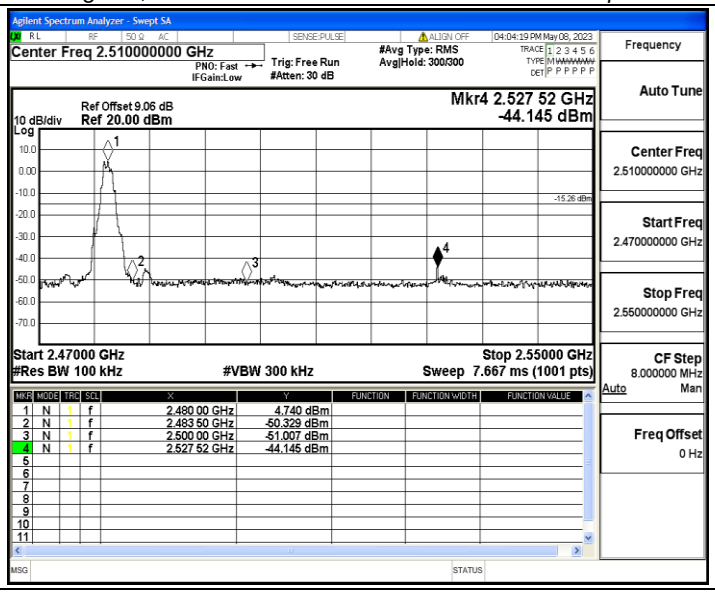
BLE_1M_Ant0_High_2480



BLE_2M_Ant0_Low_2402



BLE_2M_Ant0_High_2480


Agilent Spectrum Analyzer - Swept SA
Center Freq 2.510000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
Avg|Hold: 300/300
04:04:19 PM May 08, 2023
Frequency
Auto Tune
Ref Offset 9.06 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr4 2.527 52 GHz
-44.145 dBm
-15.26 dBm
Center Freq
2.510000000 GHz
Start Freq
2.470000000 GHz
Stop Freq
2.550000000 GHz
CF Step
8.000000 MHz
Auto
Man
Freq Offset
0 Hz
Start 2.47000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.55000 GHz
Sweep 7.667 ms (1001 pts)
1 N 1 f 2.480 00 GHz 4.740 dBm
2 N 1 f 2.483 50 GHz -50.329 dBm
3 N 1 f 2.500 00 GHz -51.007 dBm
4 N 1 f 2.527 52 GHz -44.145 dBm

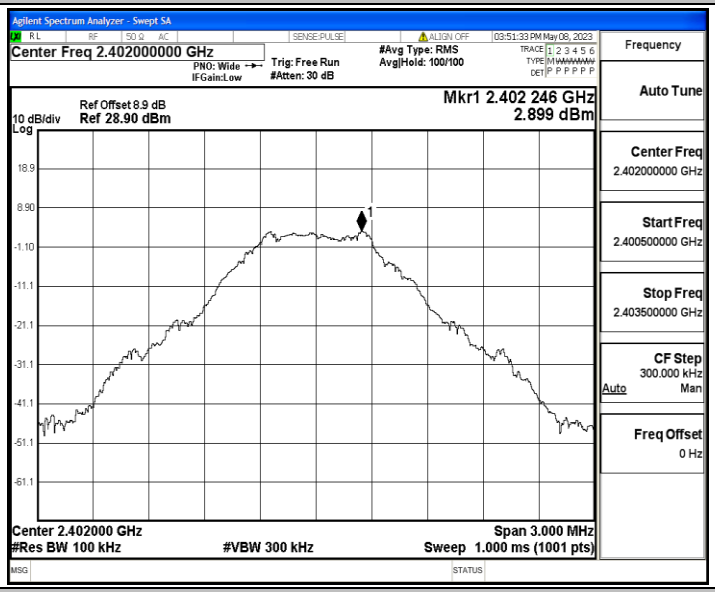
Appendix F: Conducted Spurious Emission

Test Result

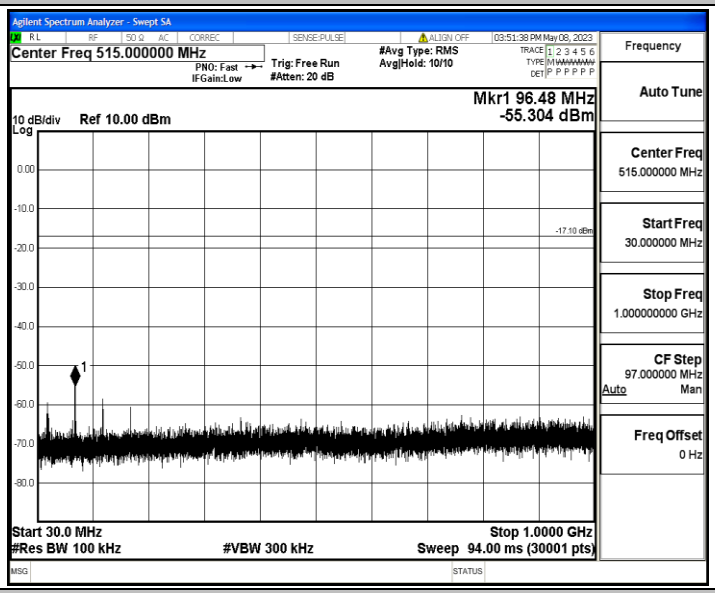
TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant0	2402	Reference	2.90	2.90	---	PASS
			30~1000	2.90	-55.3	≤-17.1	PASS
			1000~26500	2.90	-40.04	≤-17.1	PASS
		2440	Reference	3.94	3.94	---	PASS
			30~1000	3.94	-58.2	≤-16.06	PASS
			1000~26500	3.94	-39.82	≤-16.06	PASS
		2480	Reference	4.57	4.57	---	PASS
			30~1000	4.57	-57.61	≤-15.43	PASS
			1000~26500	4.57	-37.4	≤-15.43	PASS
BLE_2M	Ant0	2402	Reference	2.97	2.97	---	PASS
			30~1000	2.97	-56.75	≤-17.03	PASS
			1000~26500	2.97	-43.2	≤-17.03	PASS
		2440	Reference	4.35	4.35	---	PASS
			30~1000	4.35	-55.61	≤-15.65	PASS
			1000~26500	4.35	-43.75	≤-15.65	PASS
		2480	Reference	4.11	4.11	---	PASS
			30~1000	4.11	-55.48	≤-15.89	PASS
			1000~26500	4.11	-36.34	≤-15.89	PASS

Test Graphs

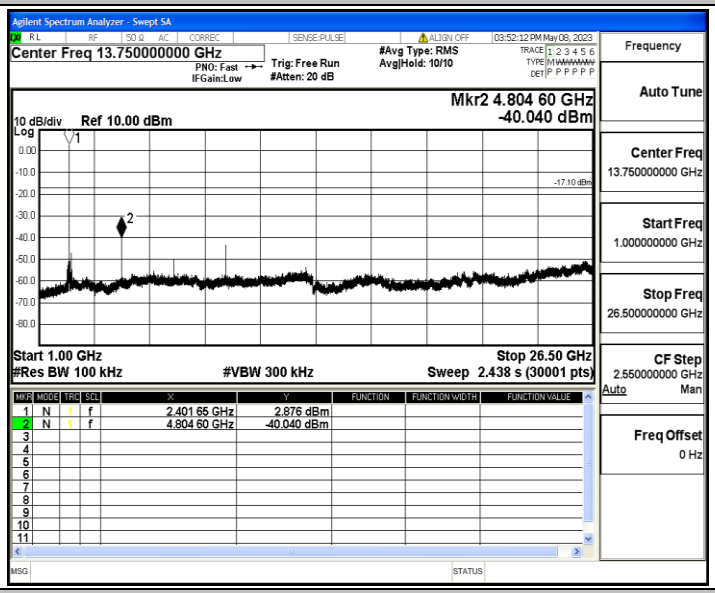
BLE_1M_Ant0_2402_0~Reference



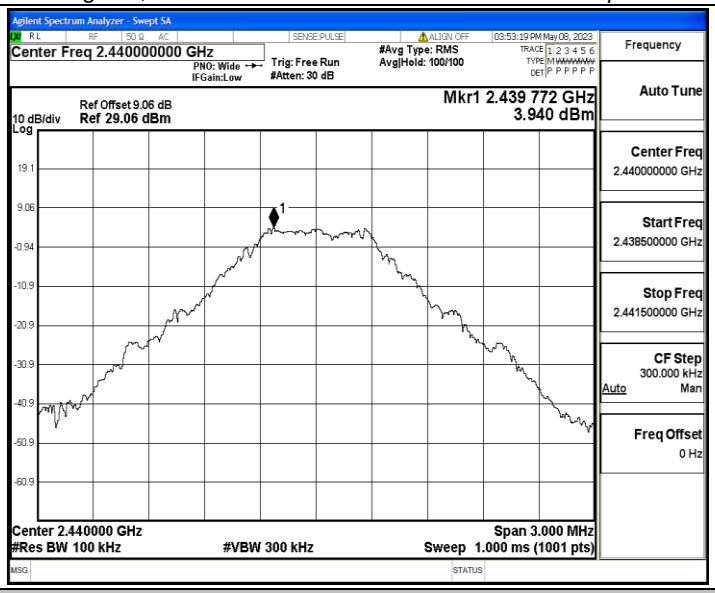
BLE_1M_Ant0_2402_30~1000



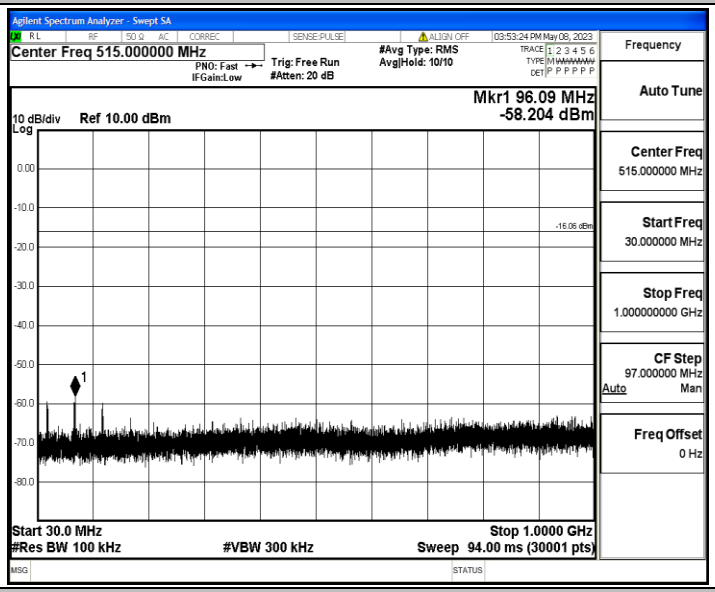
BLE_1M_Ant0_2402_1000~26500



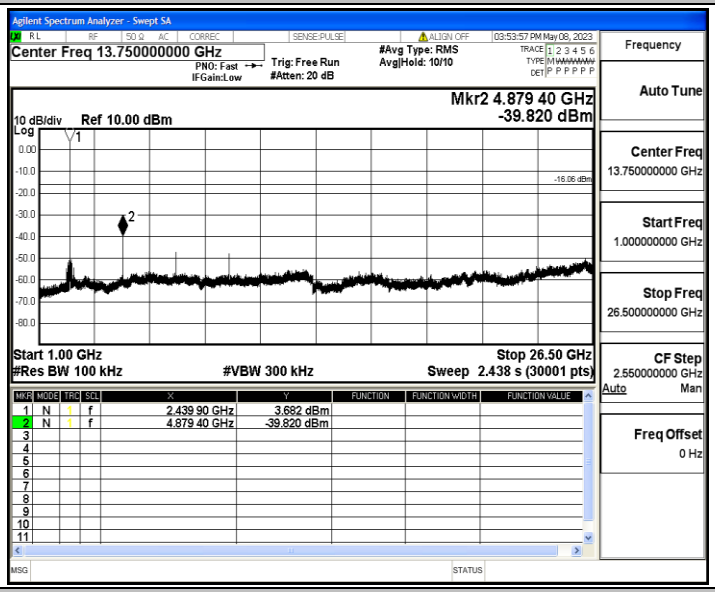
BLE_1M_Ant0_2440_0~Reference



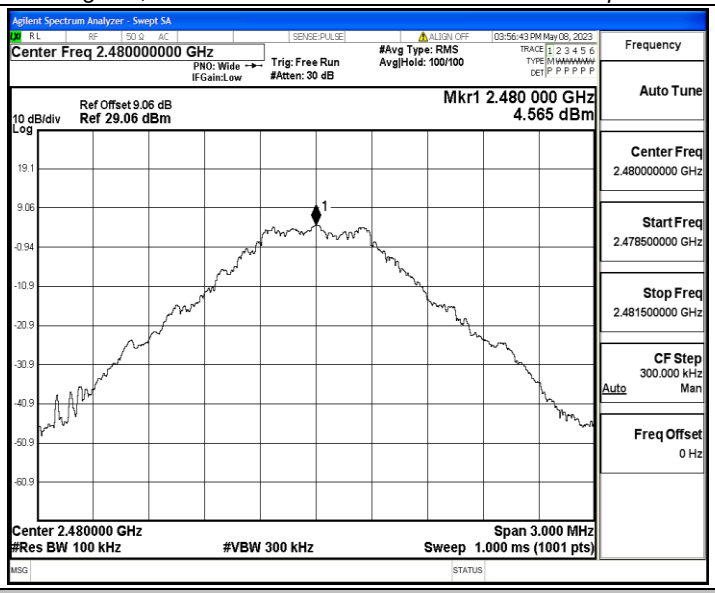
BLE_1M_Ant0_2440_30~1000



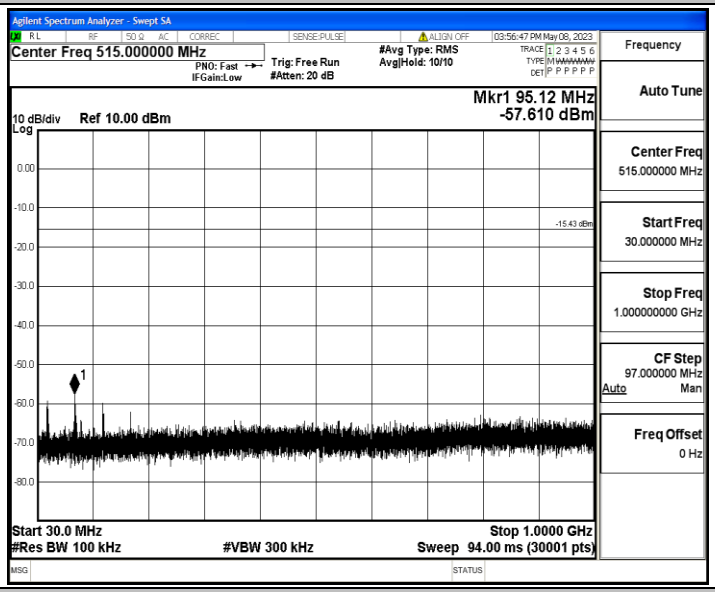
BLE_1M_Ant0_2440_1000~26500



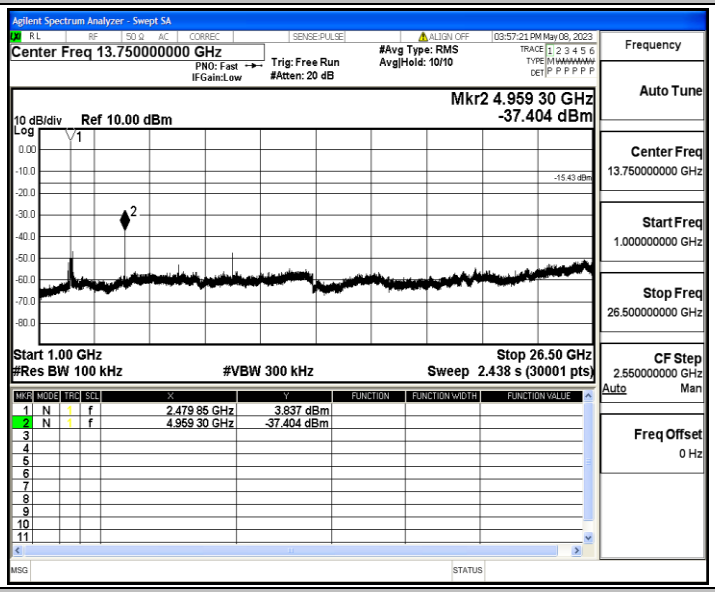
BLE_1M_Ant0_2480_0~Reference



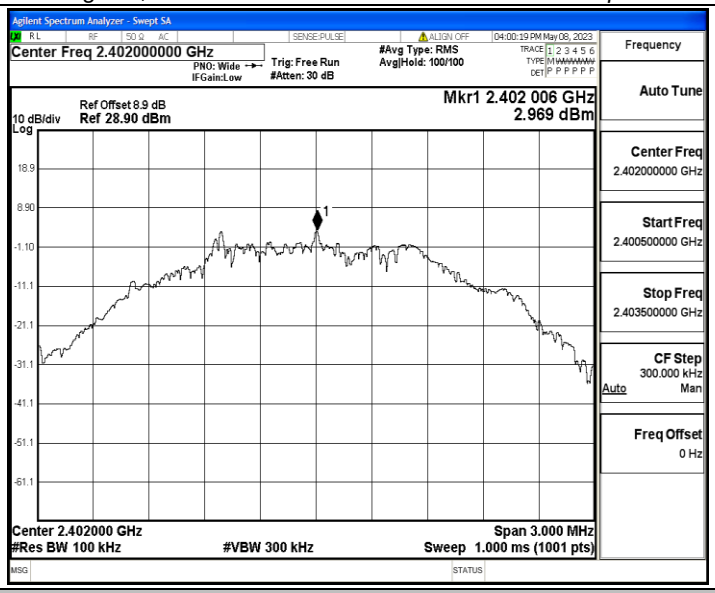
BLE_1M_Ant0_2480_30~1000



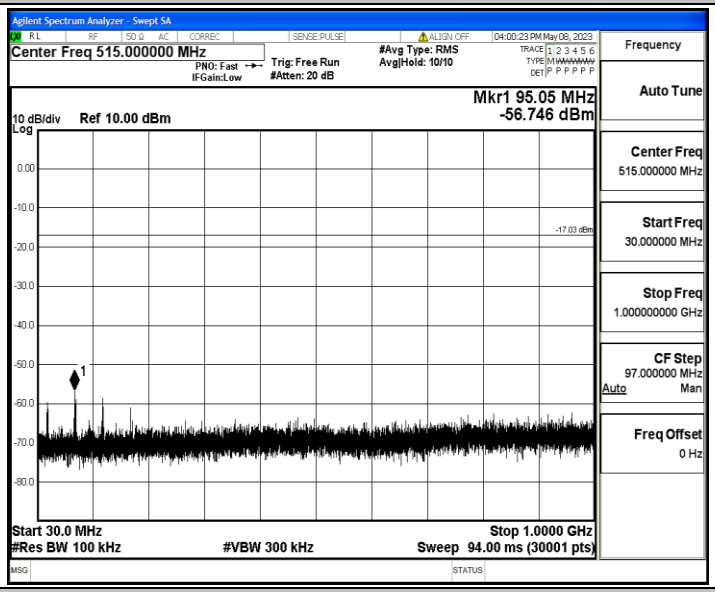
BLE_1M_Ant0_2480_1000~26500



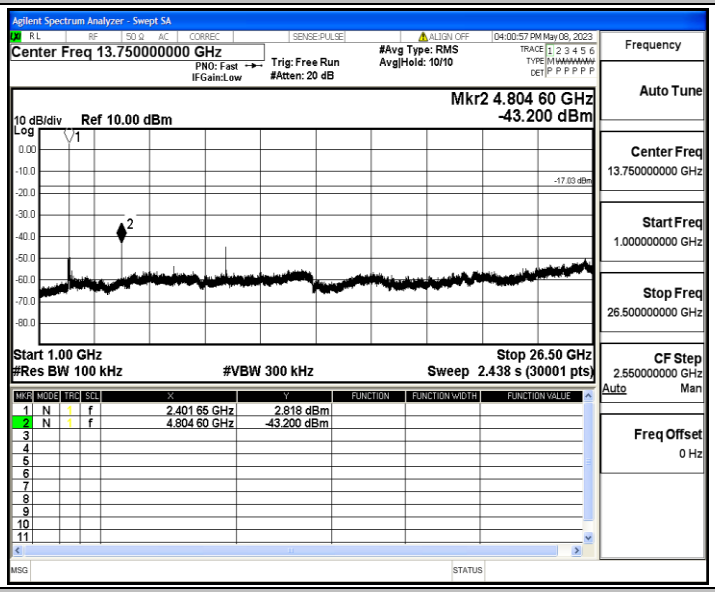
BLE_2M_Ant0_2402_0~Reference



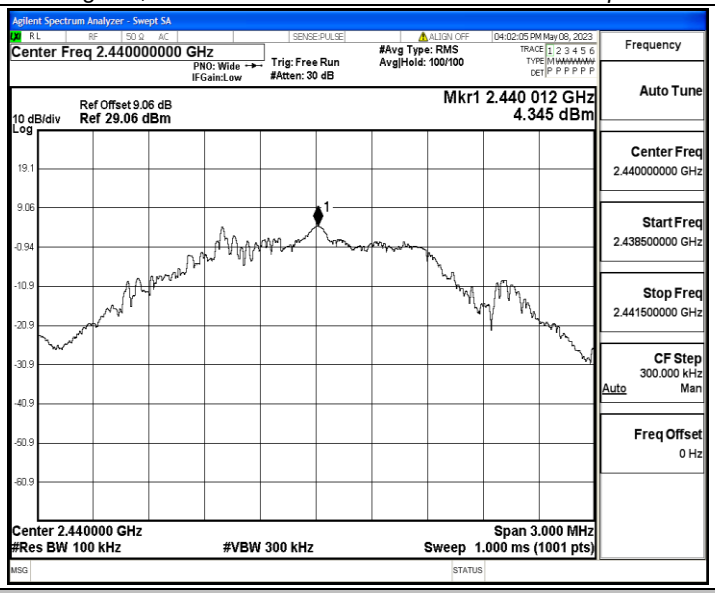
BLE_2M_Ant0_2402_30~1000



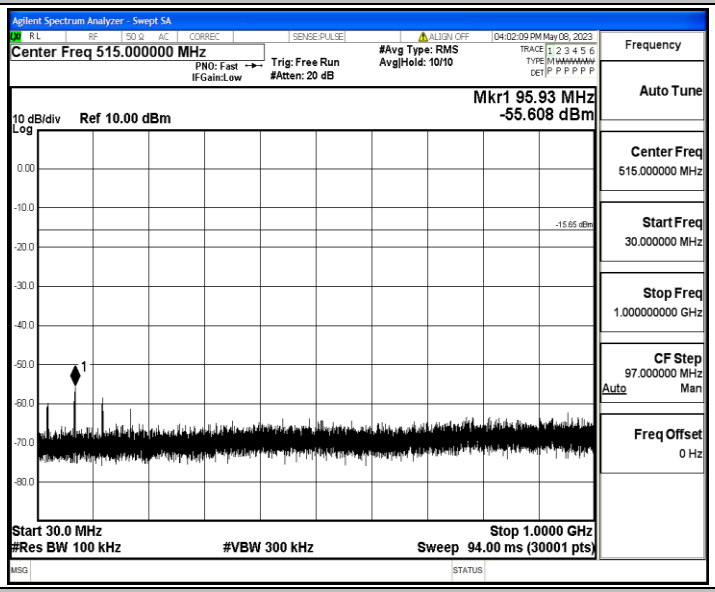
BLE_2M_Ant0_2402_1000~26500



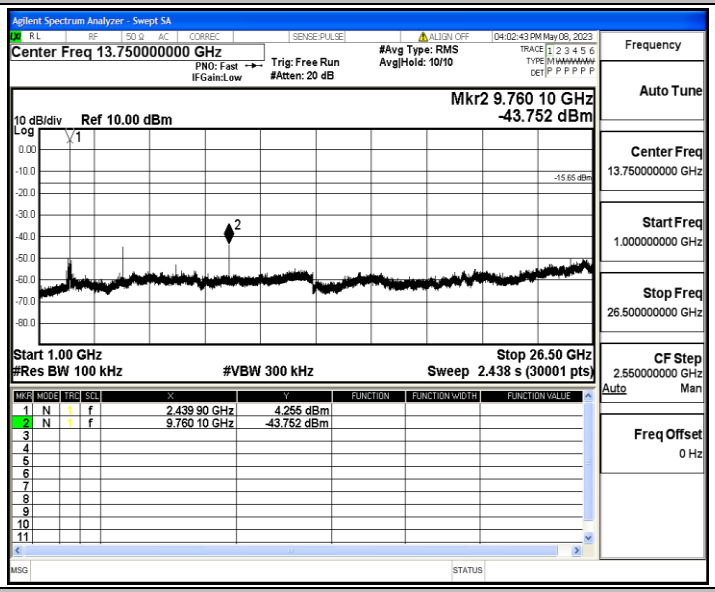
BLE_2M_Ant0_2440_0~Reference



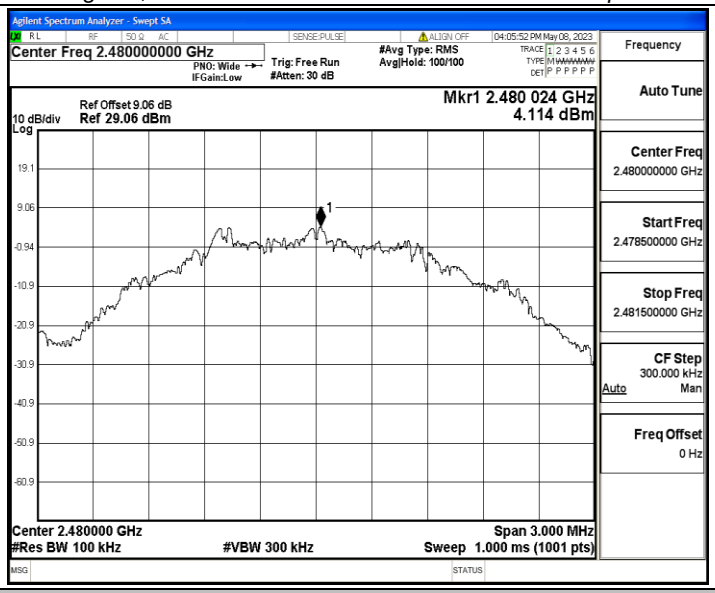
BLE_2M_Ant0_2440_30~1000



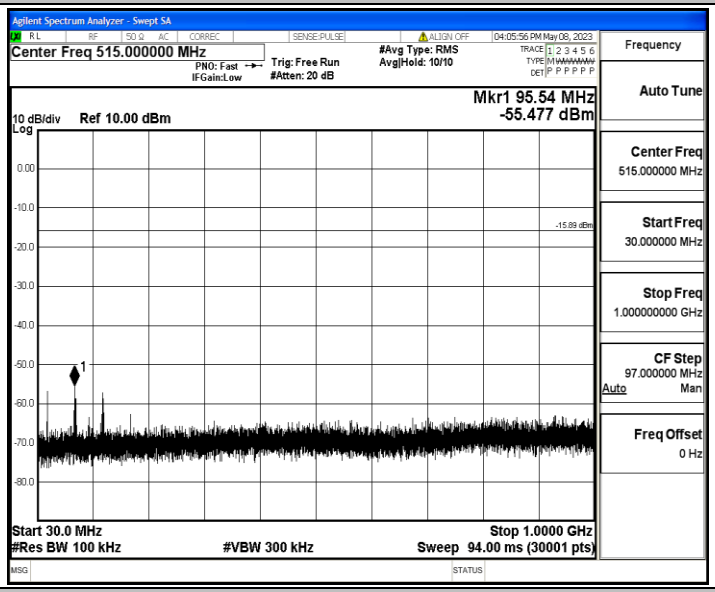
BLE_2M_Ant0_2440_1000~26500



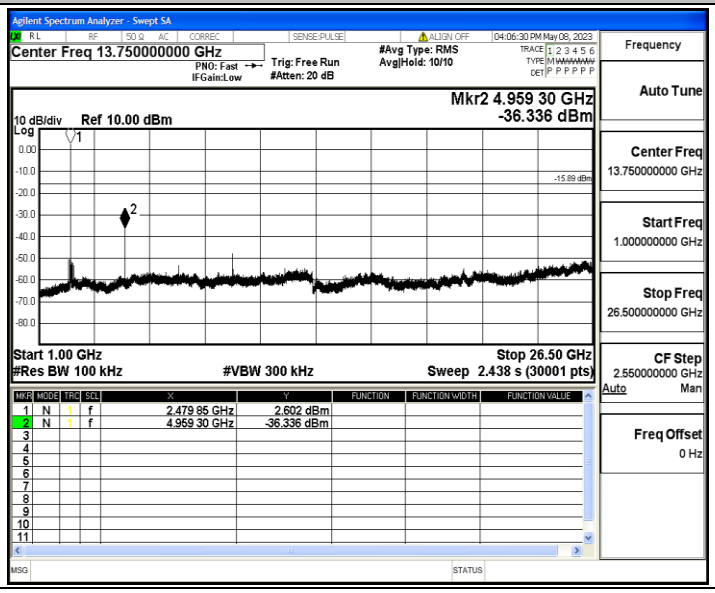
BLE_2M_Ant0_2480_0~Reference



BLE_2M_Ant0_2480_30~1000



BLE_2M_Ant0_2480_1000~26500



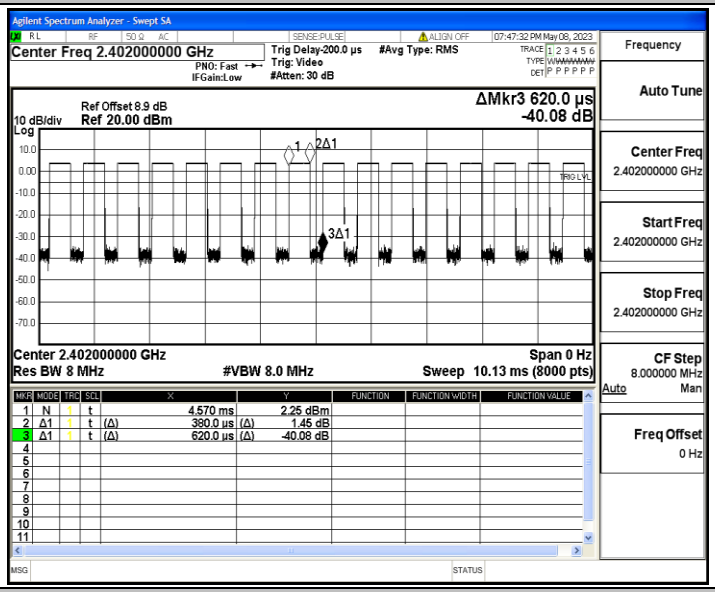
Appendix G: Duty Cycle

Test Result

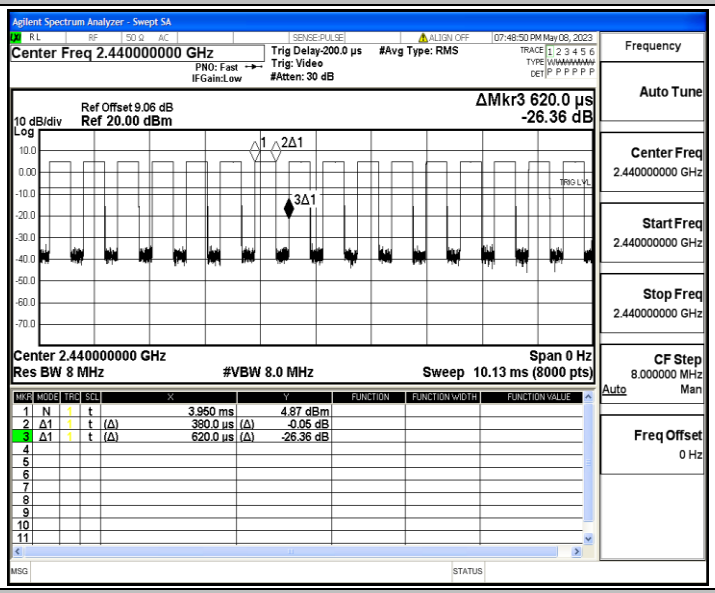
TestMode	Antenna	Channel	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	1/T[kHz]
BLE_1M	Ant0	2402	0.38	0.62	61.29	2.63
		2440	0.38	0.62	61.29	2.63
		2480	0.38	0.62	61.29	2.63
BLE_2M	Ant0	2402	0.21	0.63	33.33	4.76
		2440	0.21	0.63	33.33	4.76
		2480	0.21	0.63	33.33	4.76

Test Graphs

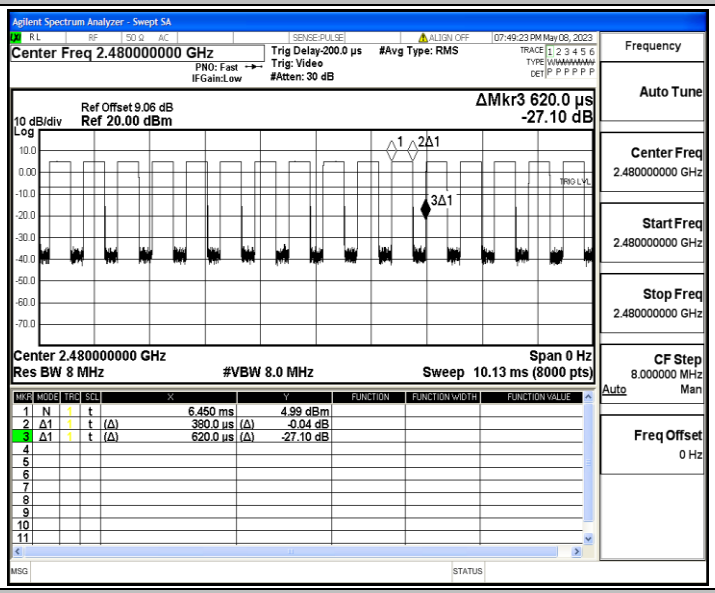
BLE_1M_Ant1_2402



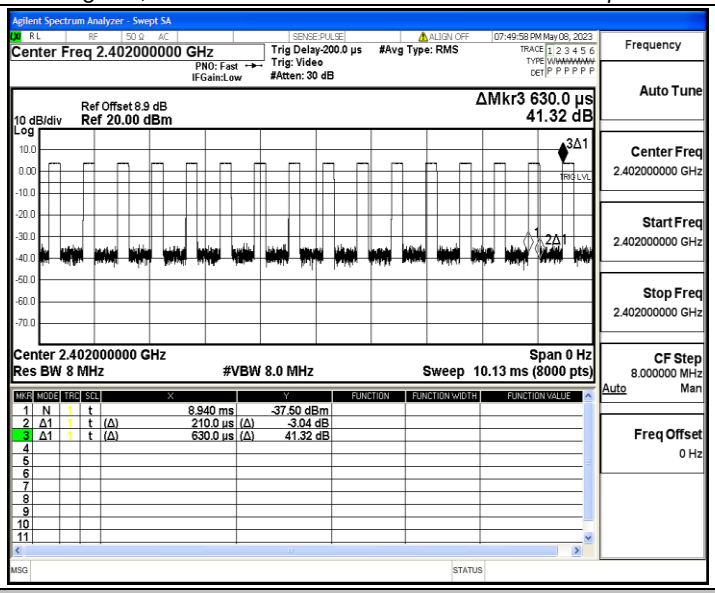
BLE_1M_Ant1_2440



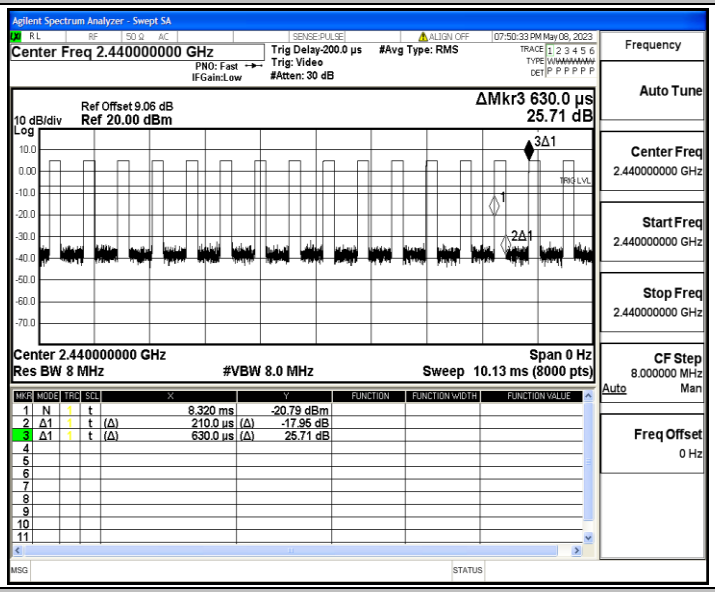
BLE_1M_Ant1_2480



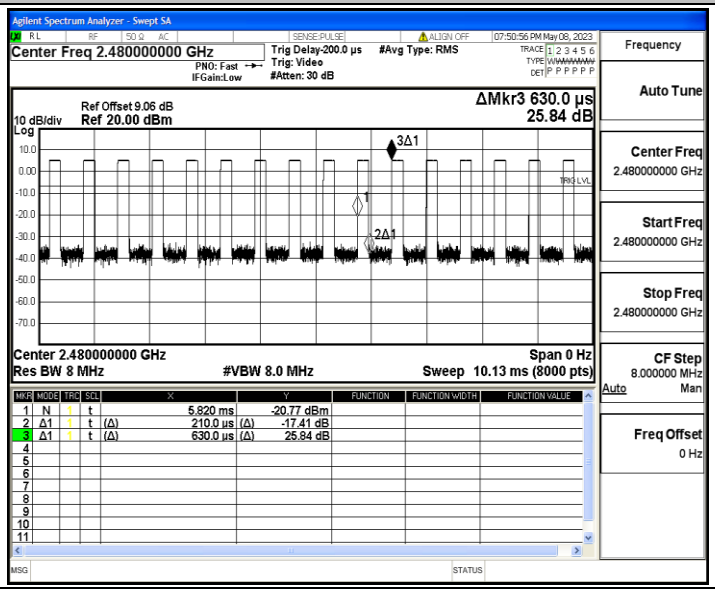
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480



Appendix H: Emissions in Restricted Bands

Test Result

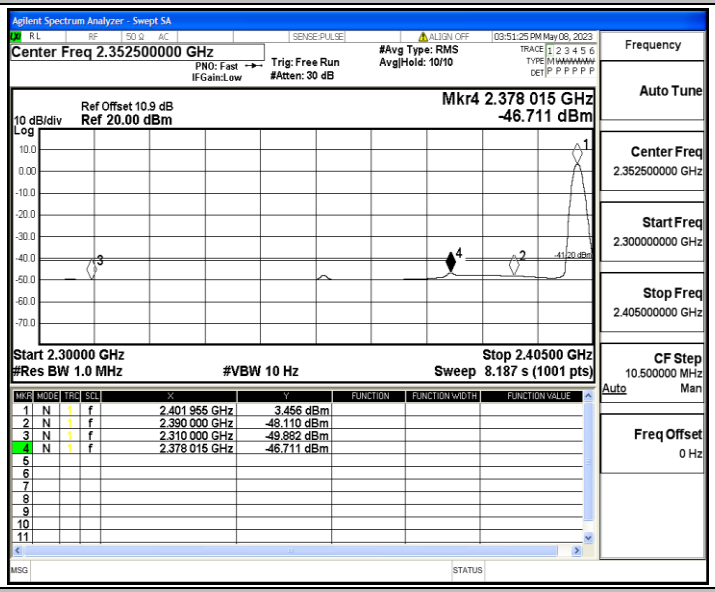
TestMode	Antenna	ChName	Channel	Detector	Freq. [MHz]	Result [dBm]	Limit [dBm]	Verdict
BLE_1M	Ant0	Low	2402	AV	2310.000	-49.88	≤-41.20	PASS
				AV	2378.015	-46.71	≤-41.20	PASS
				AV	2390.000	-48.11	≤-41.20	PASS
				Peak	2310.000	-45.19	≤-21.20	PASS
				Peak	2353.550	-37.57	≤-21.20	PASS
				Peak	2390.000	-43.97	≤-21.20	PASS
		High	2480	AV	2483.500	-47.34	≤-41.20	PASS
				AV	2483.520	-47.34	≤-41.20	PASS
				AV	2500.000	-47.41	≤-41.20	PASS
				Peak	2483.500	-42.38	≤-21.20	PASS
				Peak	2483.920	-31.41	≤-21.20	PASS
				Peak	2500.000	-43.18	≤-21.20	PASS
BLE_2M	Ant0	Low	2402	AV	2310.000	-49.89	≤-41.20	PASS
				AV	2378.120	-47.87	≤-41.20	PASS
				AV	2390.000	-48.77	≤-41.20	PASS
				Peak	2310.000	-44.84	≤-21.20	PASS
				Peak	2382.950	-38.88	≤-21.20	PASS
				Peak	2390.000	-42.55	≤-21.20	PASS
		High	2480	AV	2483.500	-45.38	≤-41.20	PASS
				AV	2483.520	-45.38	≤-41.20	PASS
				AV	2500.000	-48.08	≤-41.20	PASS
				Peak	2483.500	-41.06	≤-21.20	PASS
				Peak	2485.680	-30.29	≤-21.20	PASS
				Peak	2500.000	-41.81	≤-21.20	PASS

Note：

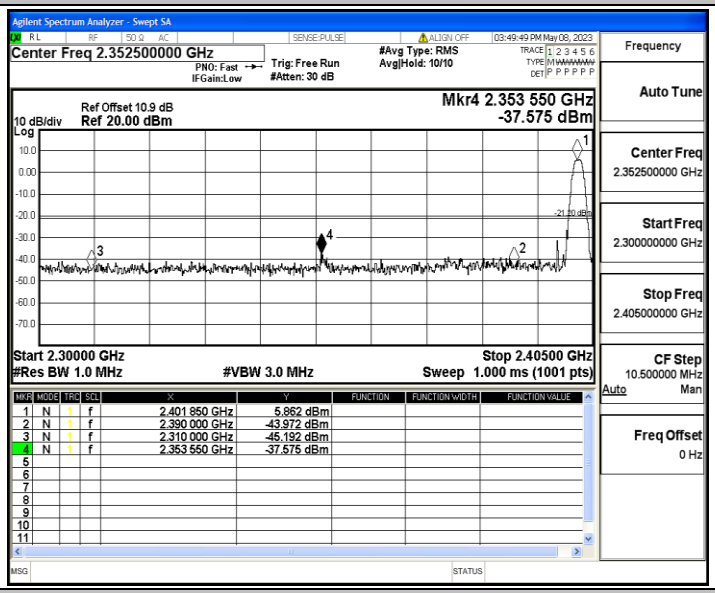
1. The Antenna Gain is compensated in the graph with 2dBi and Antenna Gain which is Higher.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

Test Graphs

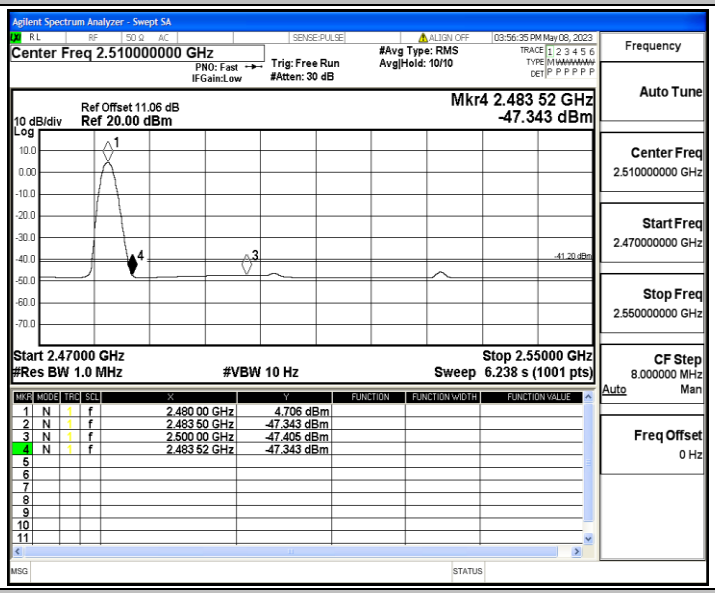
BLE_1M_Ant0_Low_2402_AV



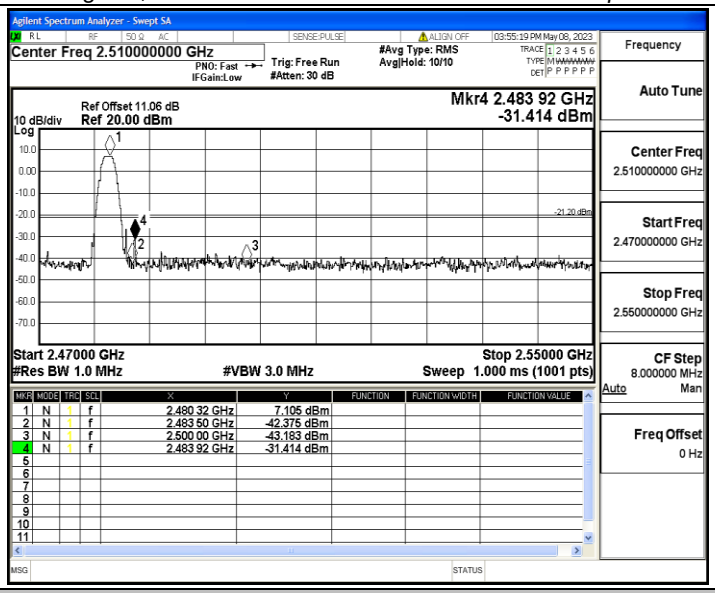
BLE_1M_Ant0_Low_2402_Peak



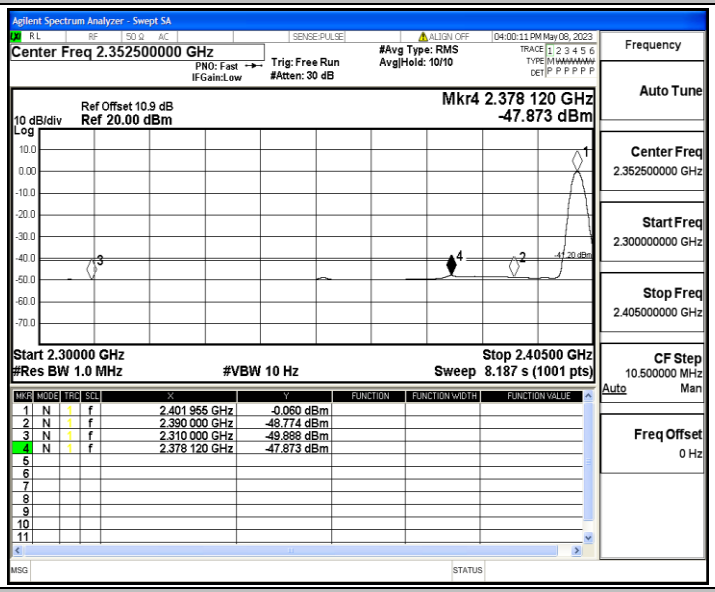
BLE_1M_Ant0_High_2480_AV



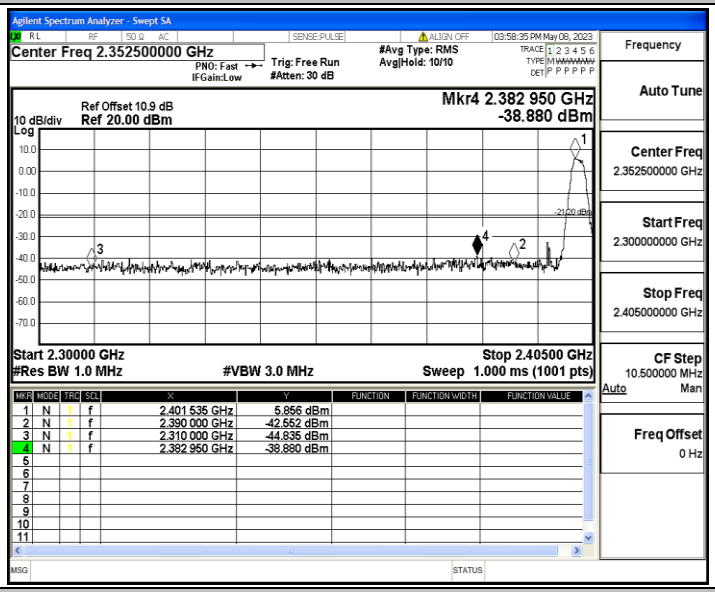
BLE_1M_Ant0_High_2480_Peak



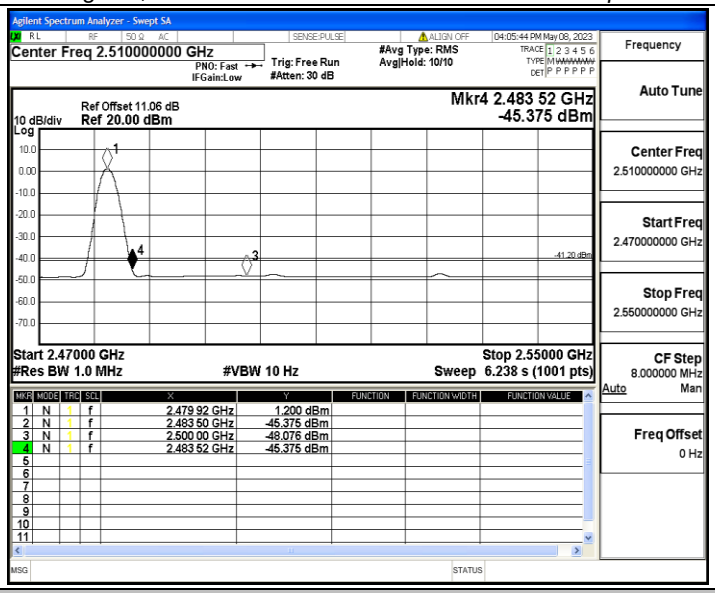
BLE_2M_Ant0_Low_2402_AV



BLE_2M_Ant0_Low_2402_Peak



BLE_2M_Ant0_High_2480_AV



BLE_2M_Ant0_High_2480_Peak