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

Product Name: Falcon, HOMATICS Device

Trade Mark: CAAVO,HOMATICS

Test Model: CFWT-01 (with Tuner)

FCC ID: 2AOVU-CFWT01

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

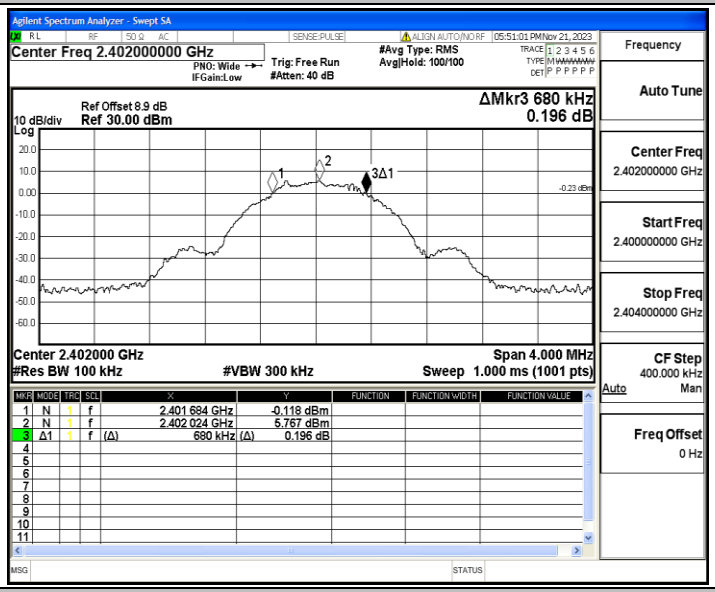
Appendix A: DTS Bandwidth

Test Result

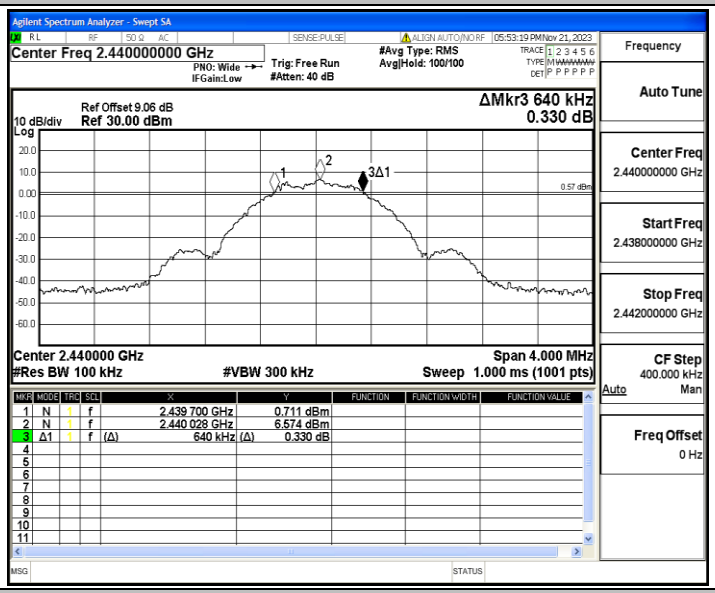
TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.680	2401.684	2402.364	0.5	PASS
		2440	0.640	2439.700	2440.340	0.5	PASS
		2480	0.652	2479.692	2480.344	0.5	PASS
BLE_2M	Ant1	2402	1.072	2401.528	2402.600	0.5	PASS
		2440	1.056	2439.516	2440.572	0.5	PASS
		2480	1.124	2479.452	2480.576	0.5	PASS

Test Graphs

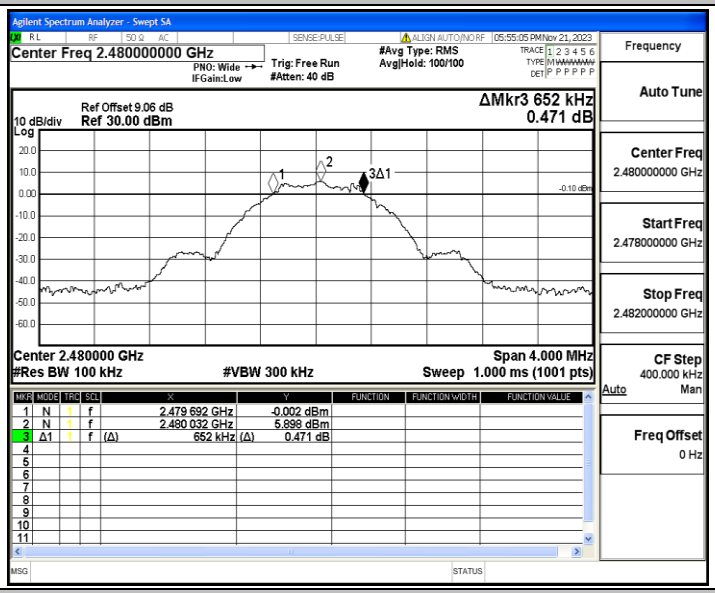
BLE_1M_Ant1_2402



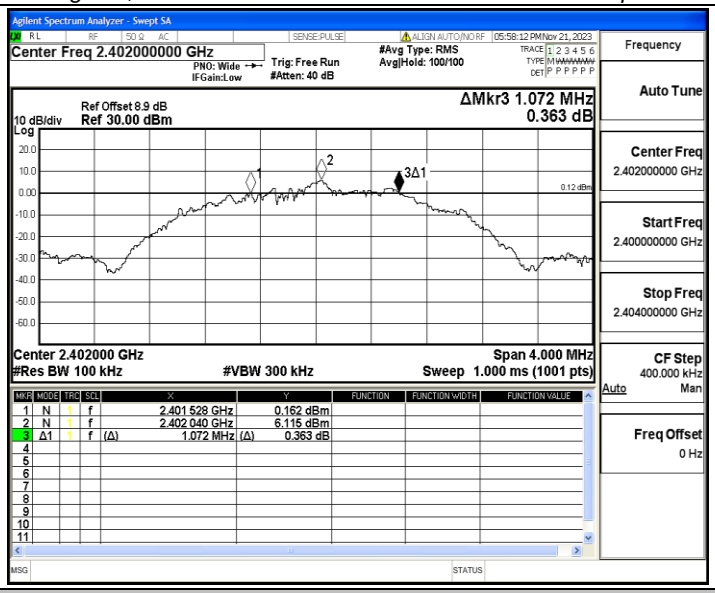
BLE_1M_Ant1_2440



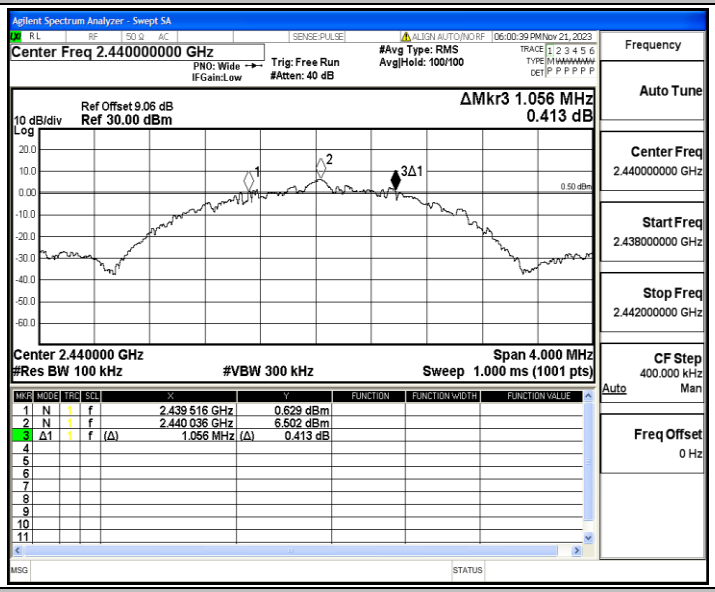
BLE_1M_Ant1_2480



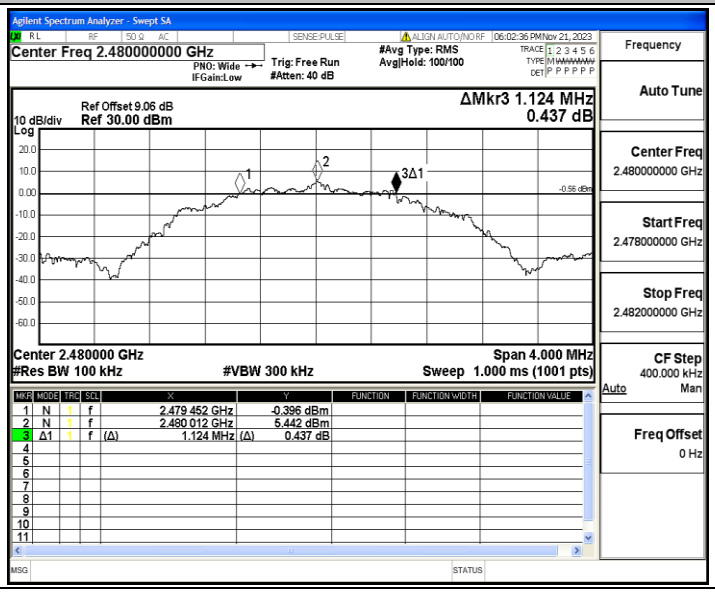
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480



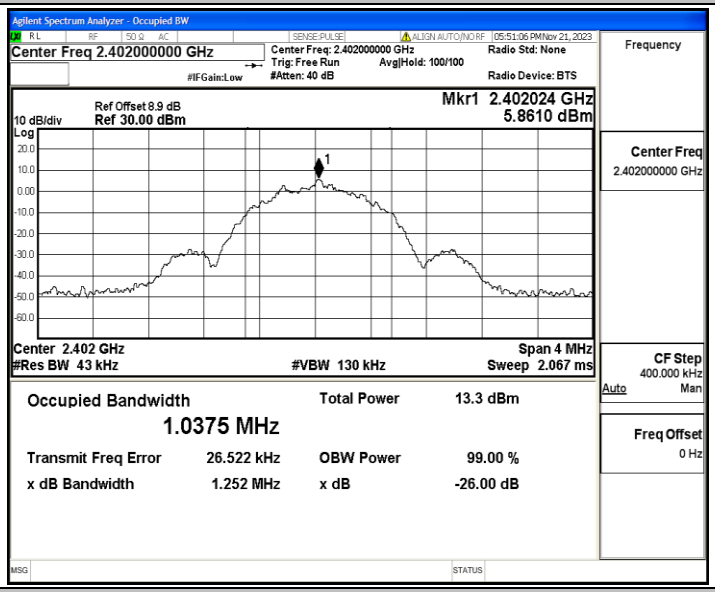
Appendix B: Occupied Channel Bandwidth

Test Result

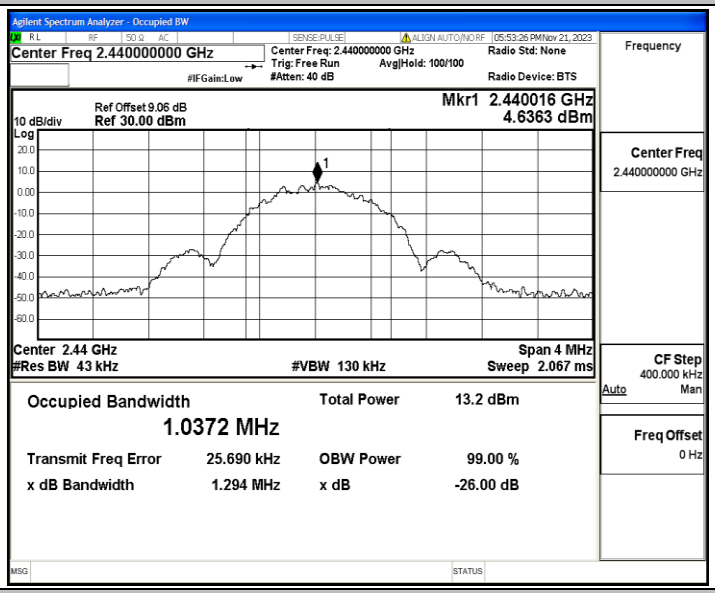
TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0375	2401.5078	2402.5453	---	---
		2440	1.0372	2439.5071	2440.5443	---	---
		2480	1.0344	2479.5108	2480.5452	---	---
BLE_2M	Ant1	2402	2.0623	2401.0140	2403.0763	---	---
		2440	2.0730	2439.0051	2441.0781	---	---
		2480	2.0387	2479.0304	2481.0691	---	---

Test Graphs

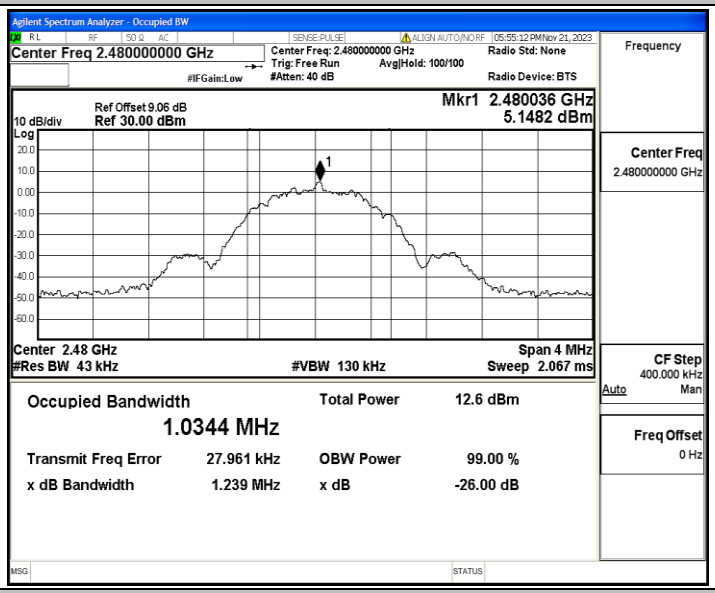
BLE_1M_Ant1_2402



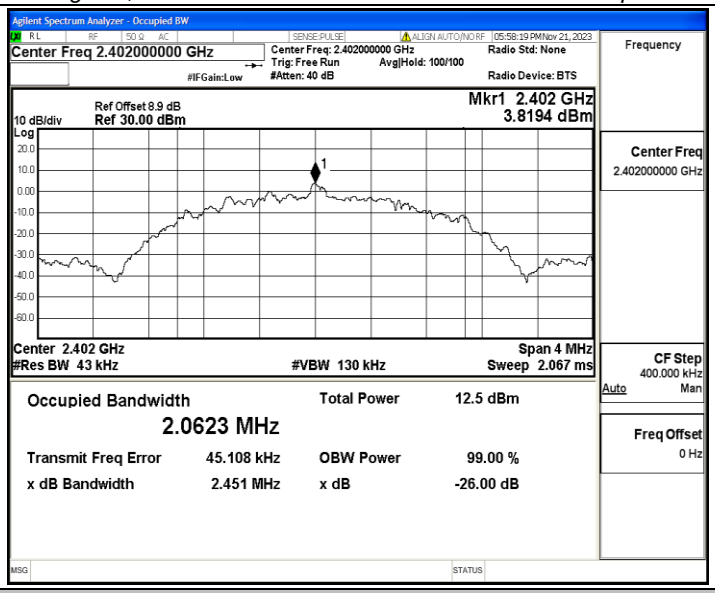
BLE_1M_Ant1_2440



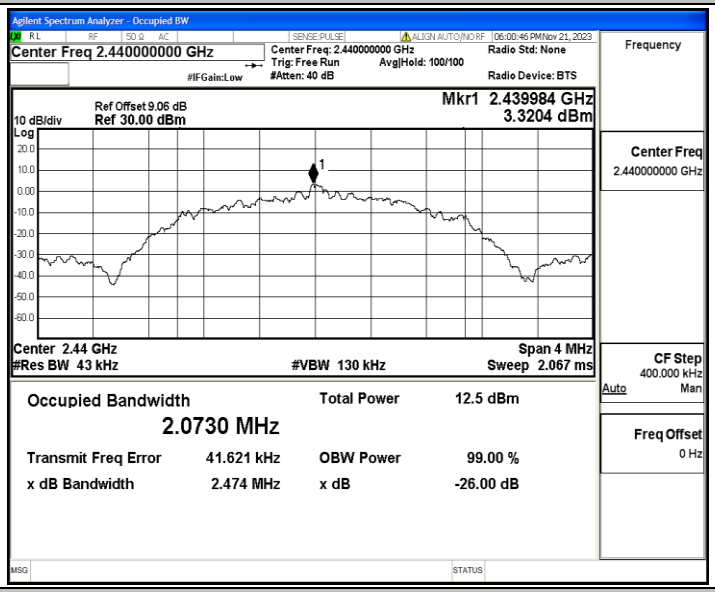
BLE_1M_Ant1_2480



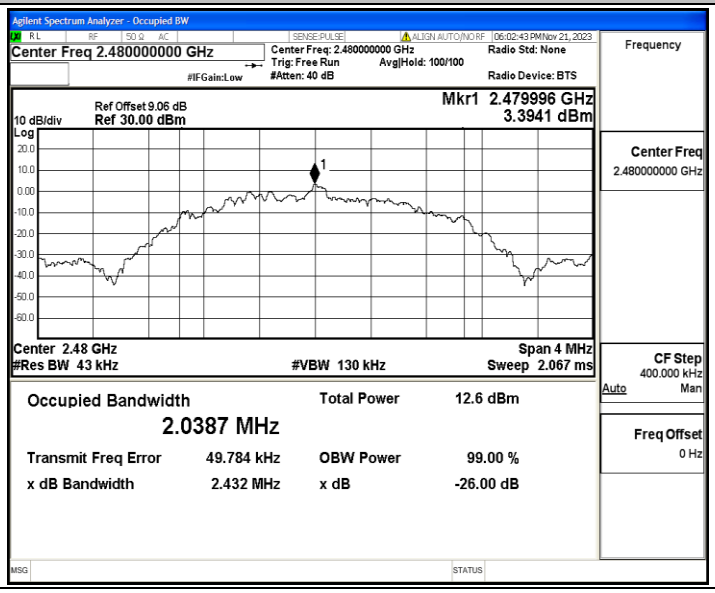
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480



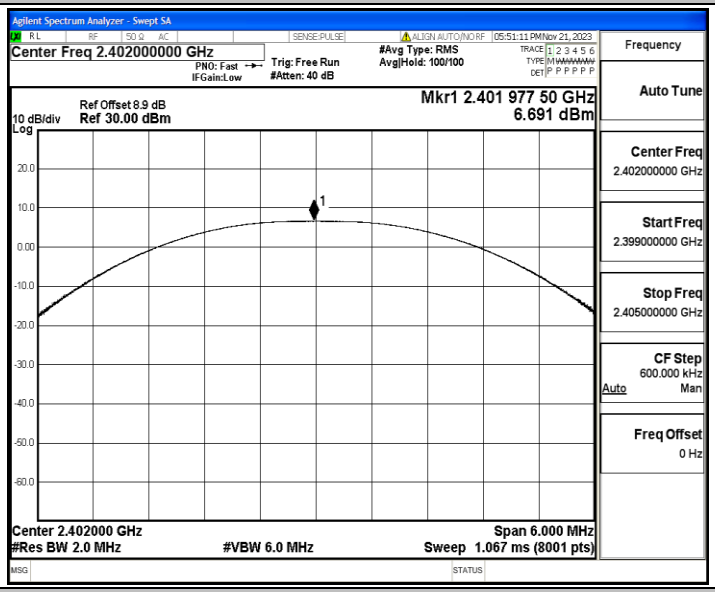
Appendix C: Maximum Peak conducted output power

Test Result

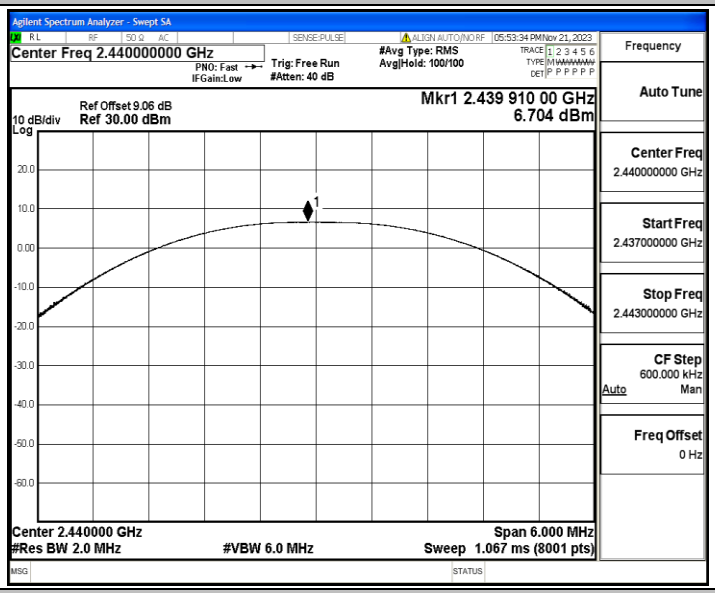
TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	6.69	≤30	PASS
		2440	6.7	≤30	PASS
		2480	6.14	≤30	PASS
BLE_2M	Ant1	2402	6.75	≤30	PASS
		2440	6.91	≤30	PASS
		2480	6.39	≤30	PASS

Test Graphs

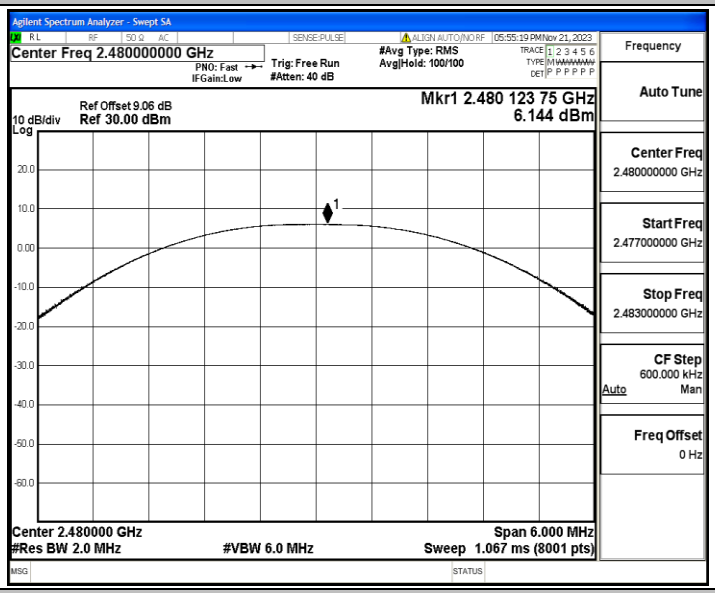
BLE_1M_Ant1_2402



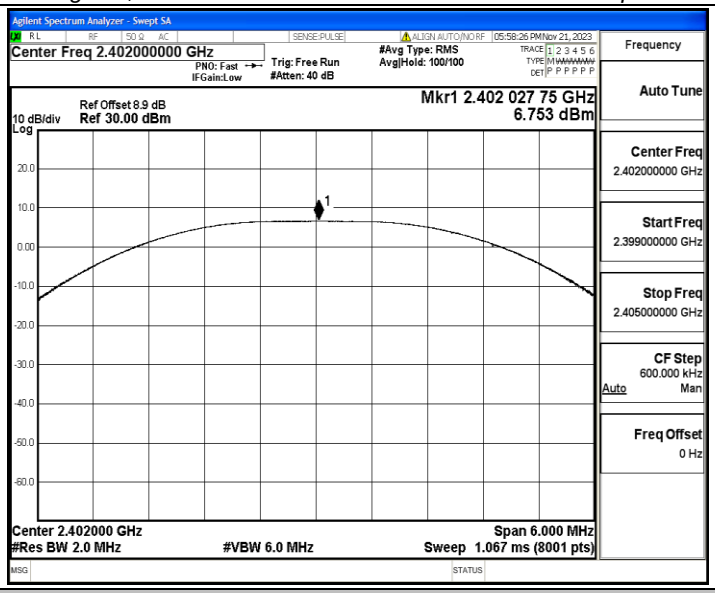
BLE_1M_Ant1_2440



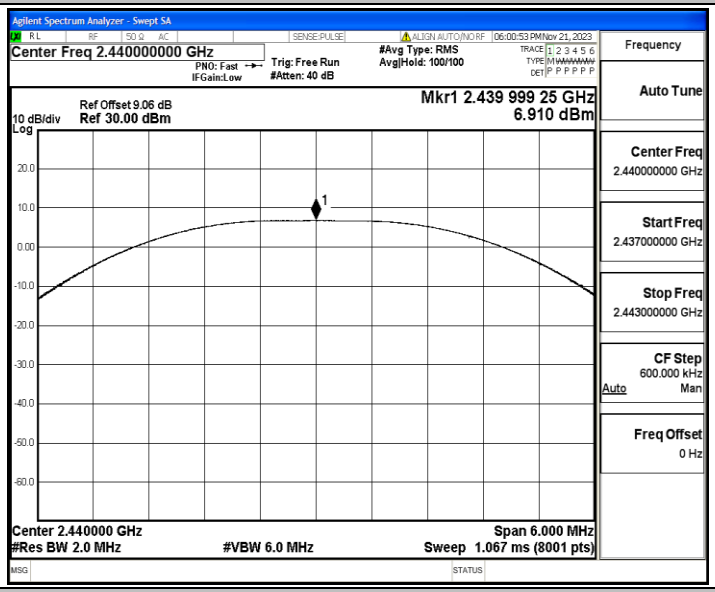
BLE_1M_Ant1_2480



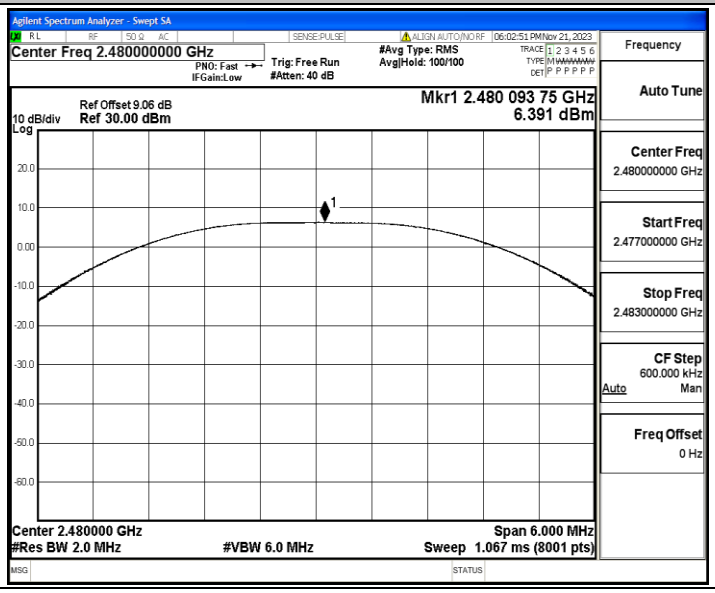
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480



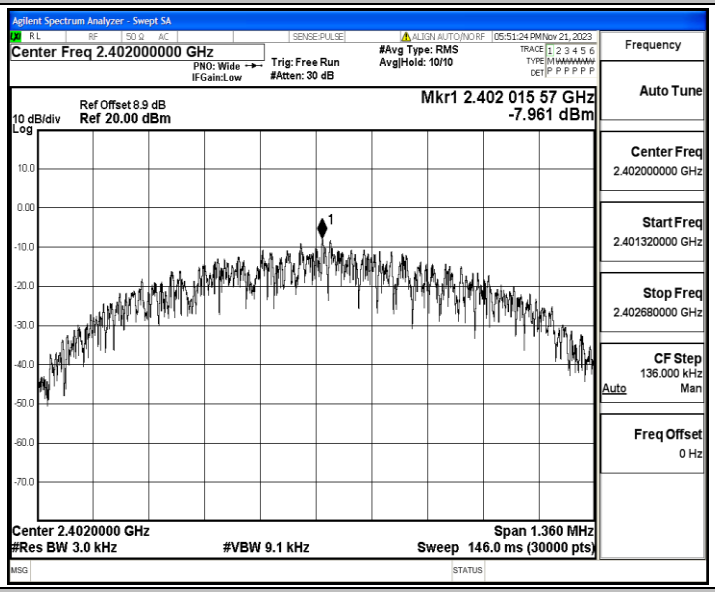
Appendix D: Maximum power spectral density

Test Result

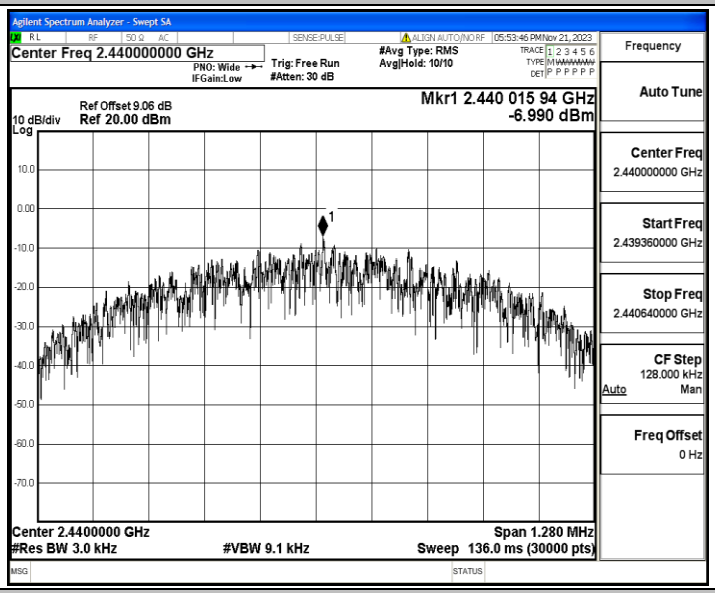
TestMode	Antenna	Channel	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-7.96	≤8.00	PASS
		2440	-6.99	≤8.00	PASS
		2480	-8.95	≤8.00	PASS
BLE_2M	Ant1	2402	-11.91	≤8.00	PASS
		2440	-11.63	≤8.00	PASS
		2480	-9.92	≤8.00	PASS

Test Graphs

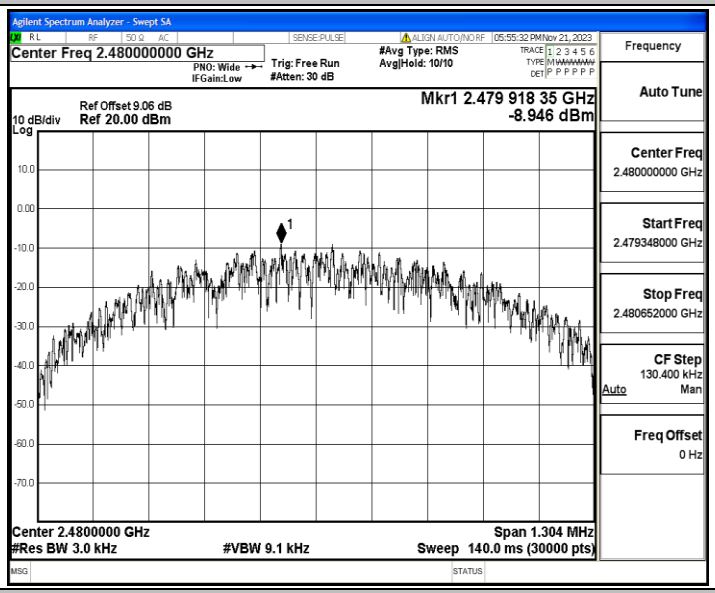
BLE_1M_Ant1_2402



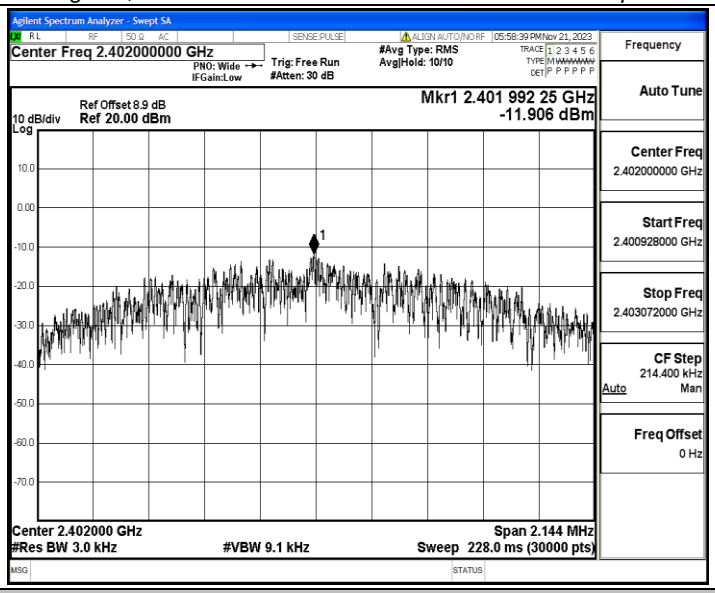
BLE_1M_Ant1_2440



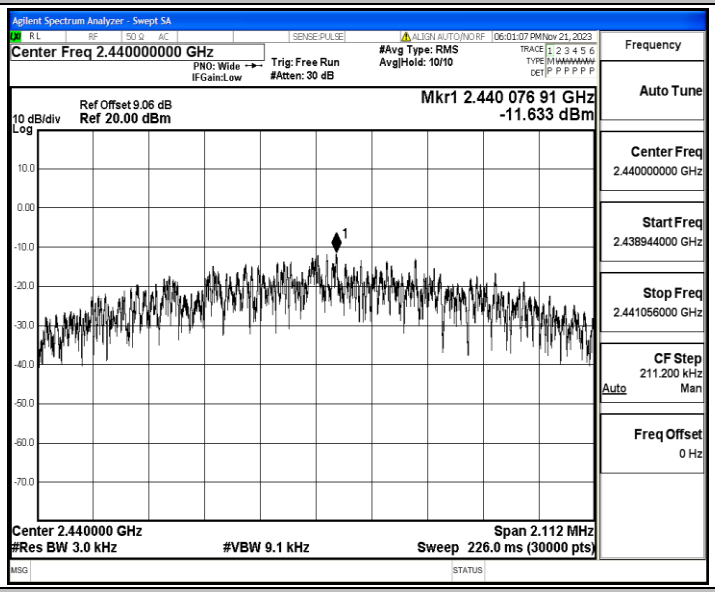
BLE_1M_Ant1_2480



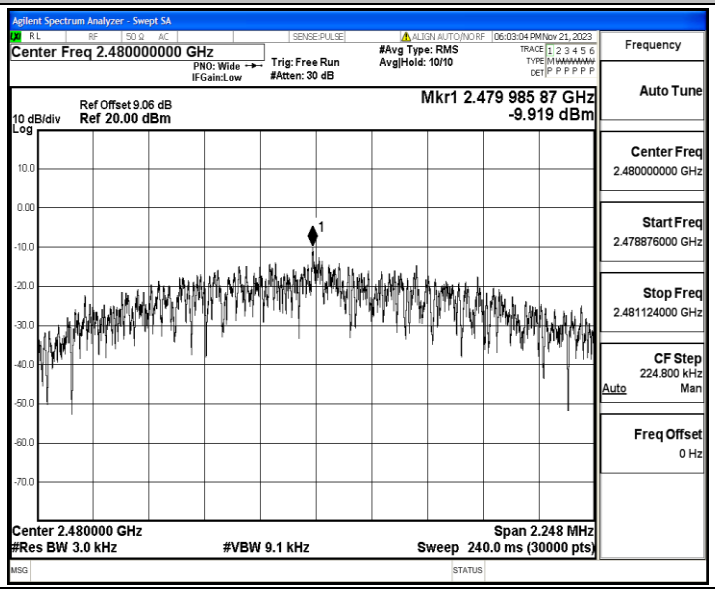
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480



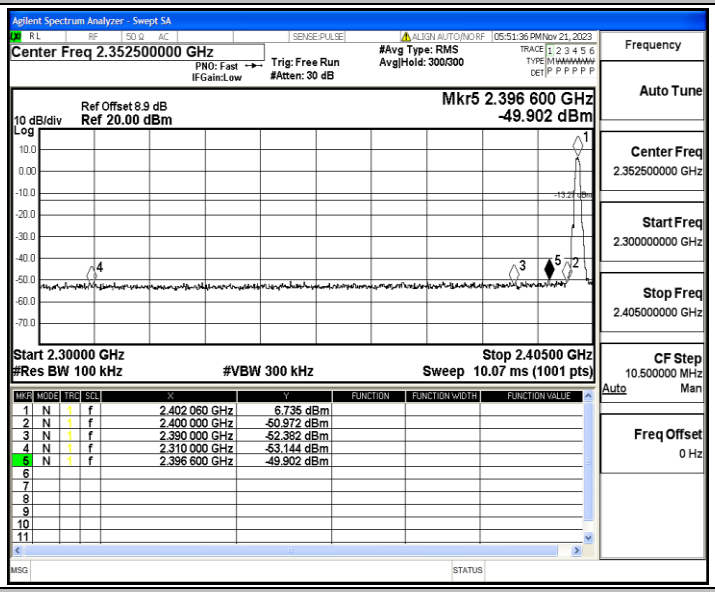
Appendix E: Band edge measurements

Test Result

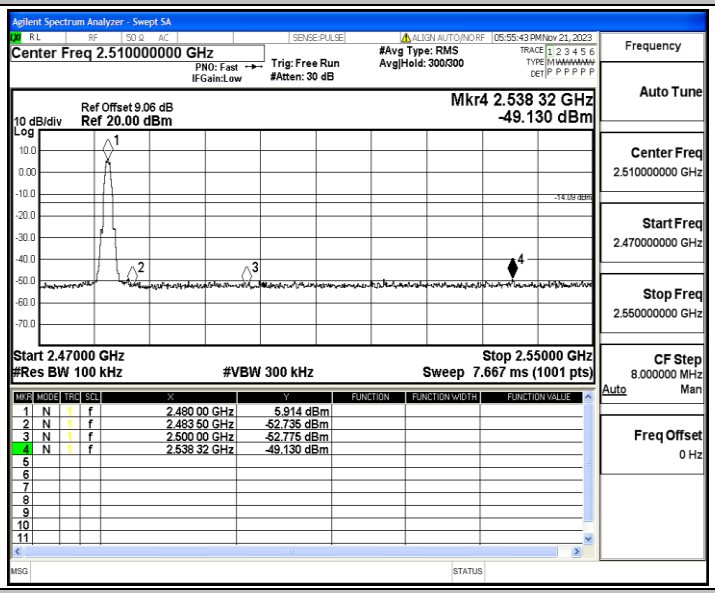
TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	6.74	-49.9	≤-13.27	PASS
		High	2480	5.91	-49.13	≤-14.09	PASS
BLE_2M	Ant1	Low	2402	6.47	-26.94	≤-13.53	PASS
		High	2480	6.09	-49.47	≤-13.91	PASS

Test Graphs

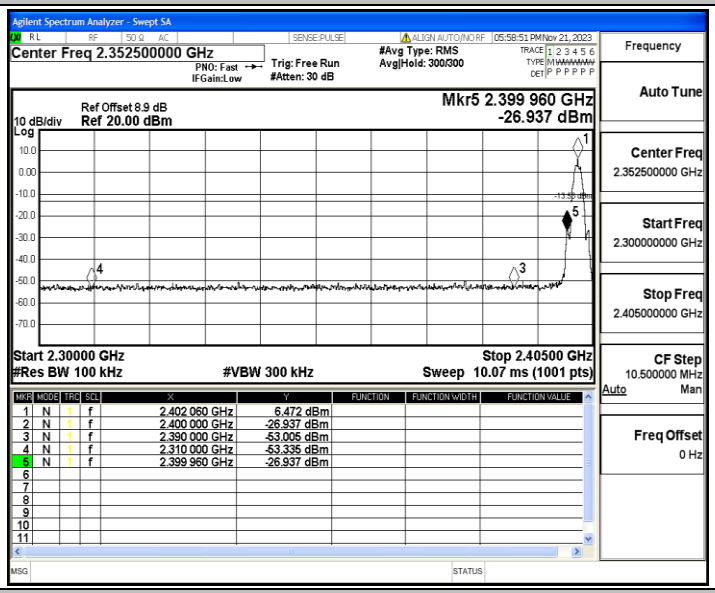
BLE_1M_Ant1_Low_2402



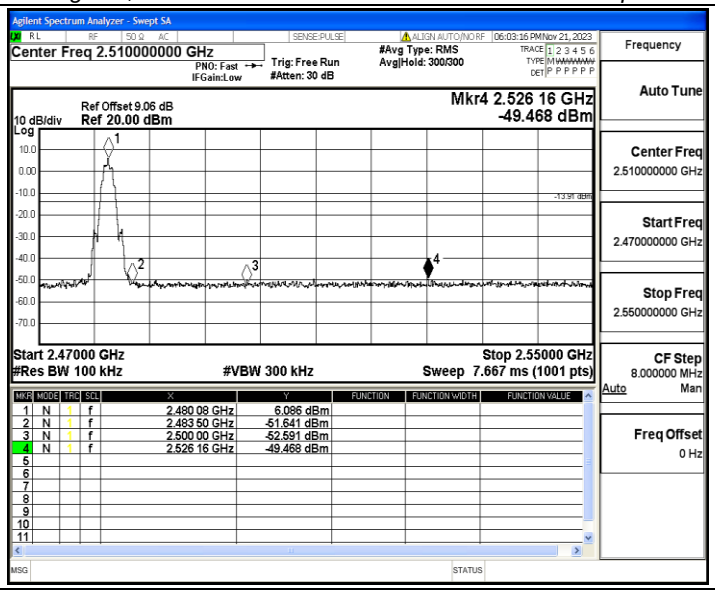
BLE_1M_Ant1_High_2480



BLE_2M_Ant1_Low_2402



BLE_2M_Ant1_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
06:03:16 PM Nov 21, 2023
Frequency
Auto Tune
Ref Offset 9.06 dB
10 dB/div
Log
Ref 20.00 dBm
Mkr4 2.526 16 GHz
-49.468 dBm
Center Freq
2.510000000 GHz
Start Freq
2.470000000 GHz
Stop Freq
2.550000000 GHz
Start 2.47000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.55000 GHz
Sweep 7.667 ms (1001 pts)
CF Step
8.000000 MHz
Auto
Man
Freq Offset
0 Hz
1 N 1 f 2.480 08 GHz 6.086 dBm
2 N 1 f 2.483 50 GHz -51.641 dBm
3 N 1 f 2.500 00 GHz -52.591 dBm
4 N 1 f 2.526 16 GHz -49.468 dBm

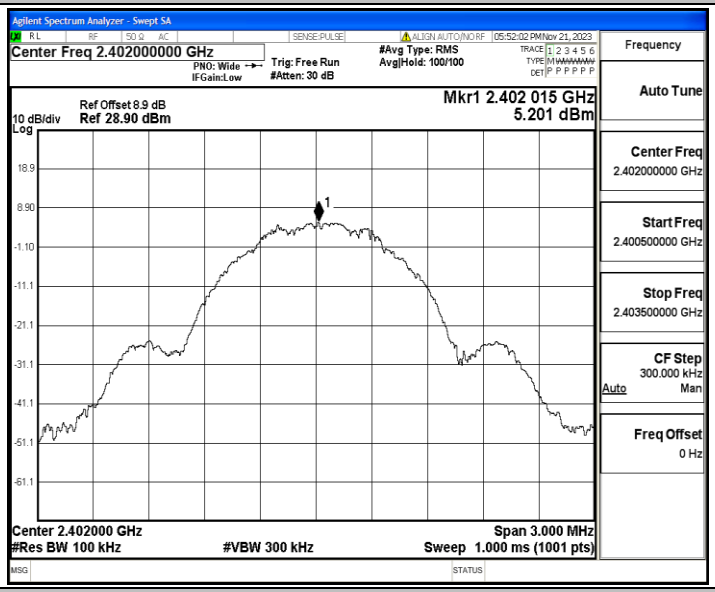
Appendix F: Conducted Spurious Emission

Test Result

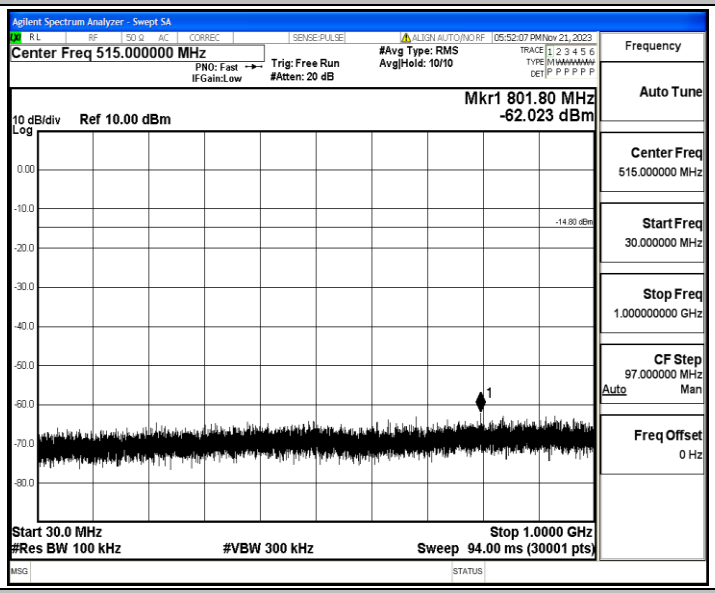
TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	5.20	5.20	---	PASS
			30~1000	5.20	-62.02	≤-14.8	PASS
			1000~26500	5.20	-48.63	≤-14.8	PASS
		2440	Reference	5.99	5.99	---	PASS
			30~1000	5.99	-62.94	≤-14.01	PASS
			1000~26500	5.99	-49.48	≤-14.01	PASS
		2480	Reference	5.12	5.12	---	PASS
			30~1000	5.12	-63.1	≤-14.88	PASS
			1000~26500	5.12	-49.88	≤-14.88	PASS
BLE_2M	Ant1	2402	Reference	6.33	6.33	---	PASS
			30~1000	6.33	-63.03	≤-13.67	PASS
			1000~26500	6.33	-48.77	≤-13.67	PASS
		2440	Reference	6.55	6.55	---	PASS
			30~1000	6.55	-61.96	≤-13.45	PASS
			1000~26500	6.55	-50.27	≤-13.45	PASS
		2480	Reference	5.92	5.92	---	PASS
			30~1000	5.92	-63.22	≤-14.08	PASS
			1000~26500	5.92	-50.04	≤-14.08	PASS

Test Graphs

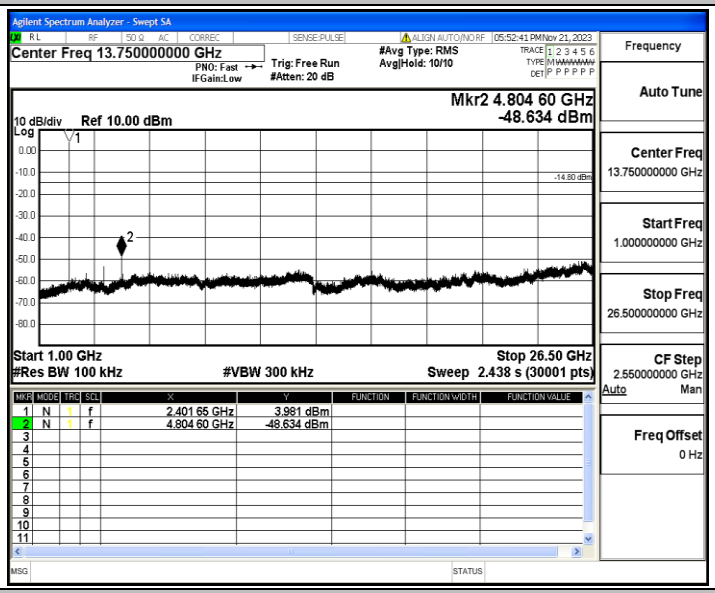
BLE_1M_Ant1_2402_0~Reference



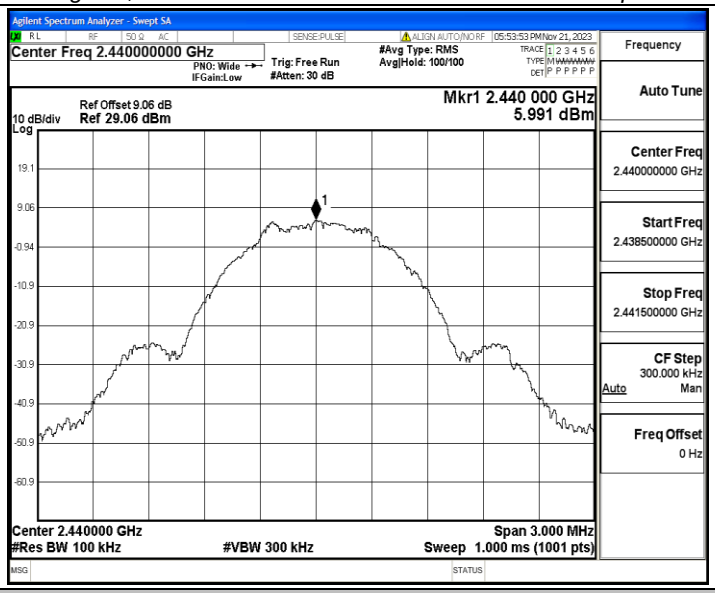
BLE_1M_Ant1_2402_30~1000



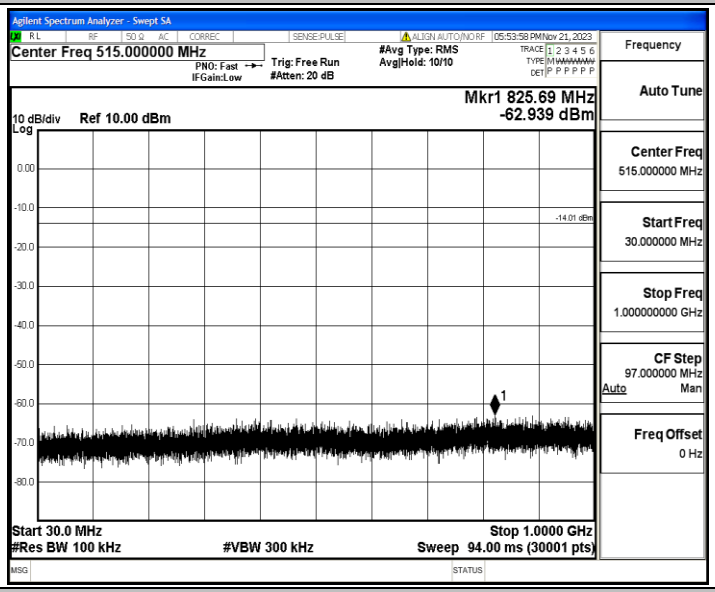
BLE_1M_Ant1_2402_1000~26500



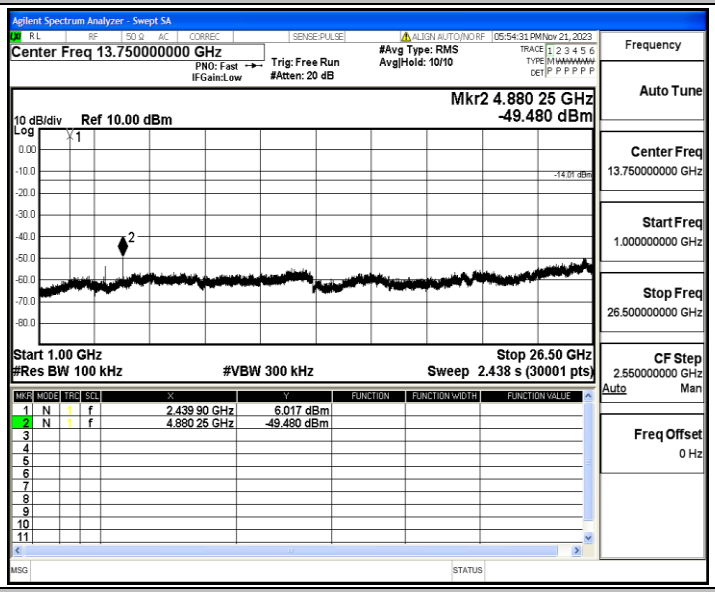
BLE_1M_Ant1_2440_0~Reference



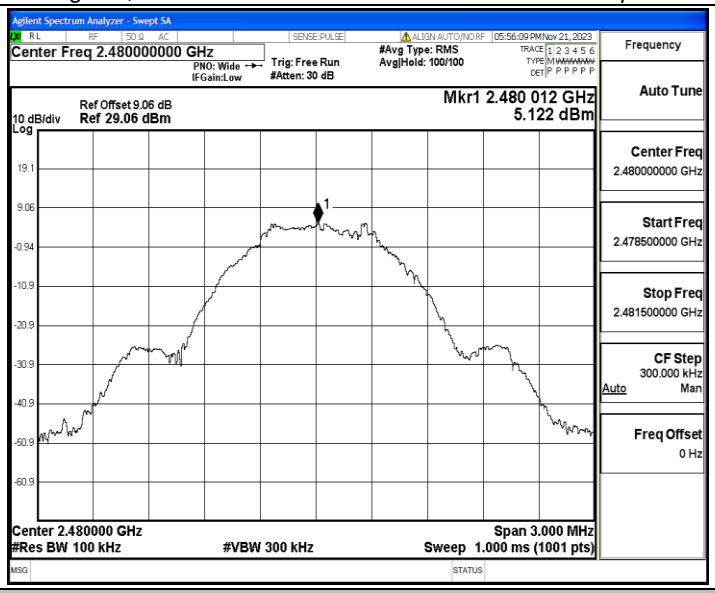
BLE_1M_Ant1_2440_30~1000



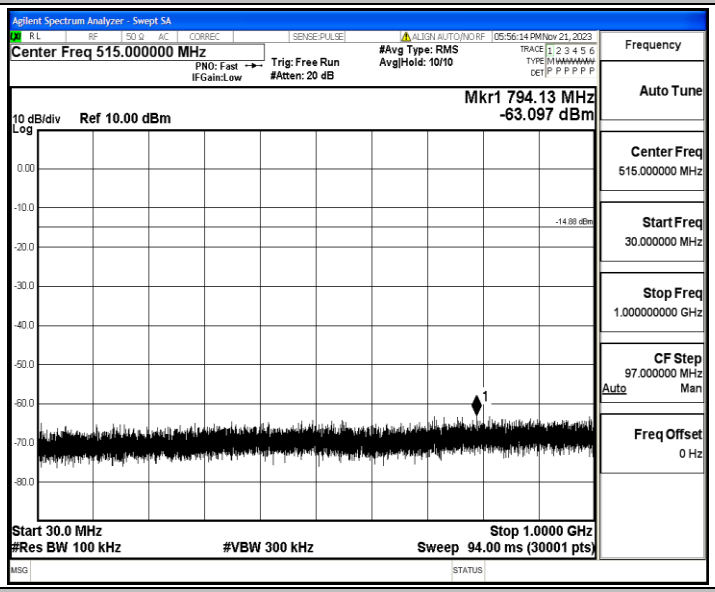
BLE_1M_Ant1_2440_1000~26500



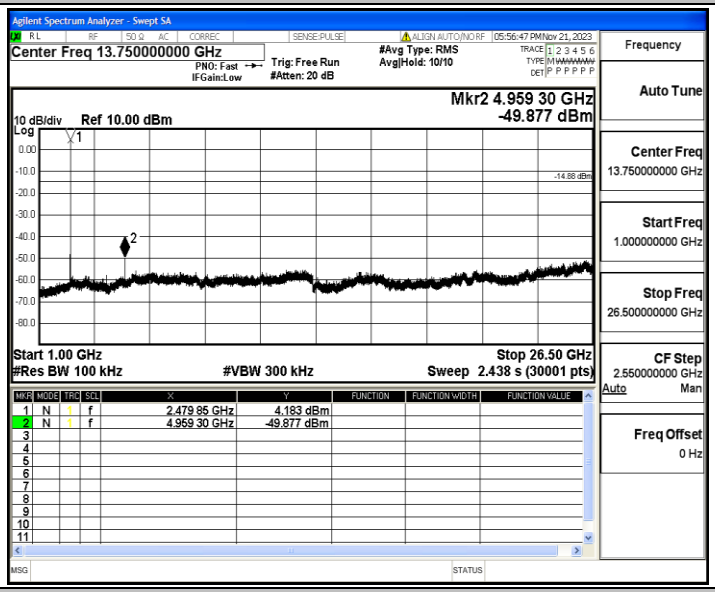
BLE_1M_Ant1_2480_0~Reference



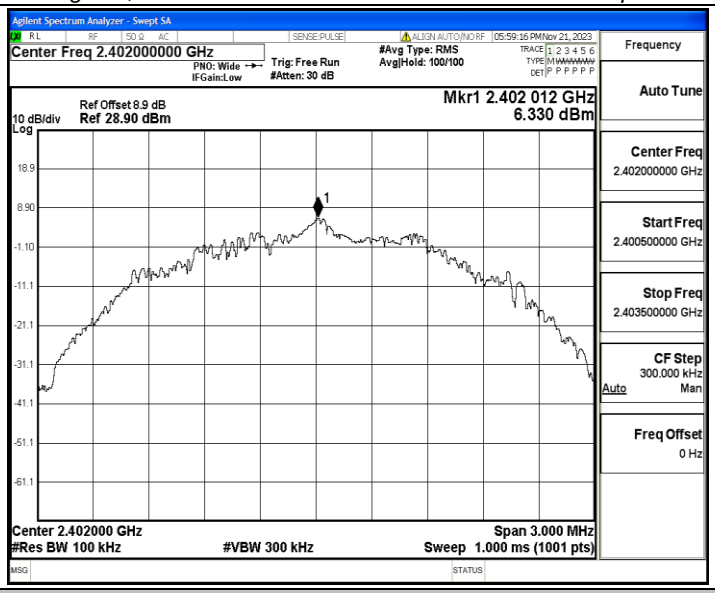
BLE_1M_Ant1_2480_30~1000



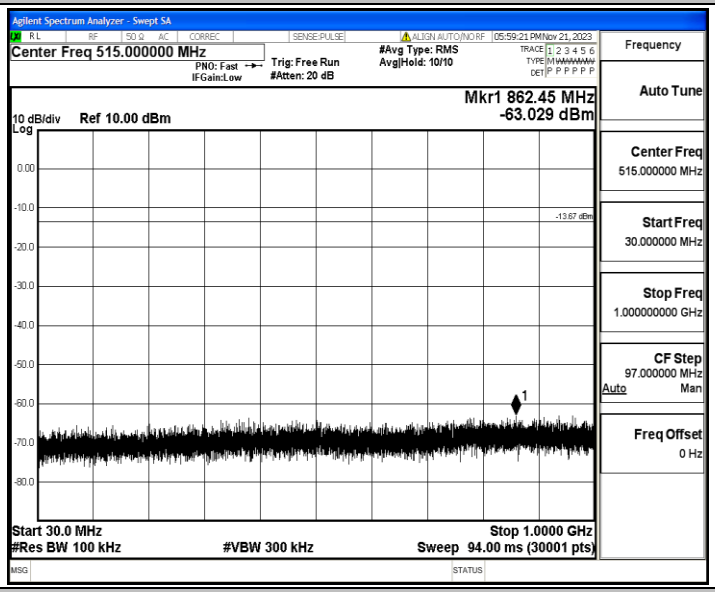
BLE_1M_Ant1_2480_1000~26500



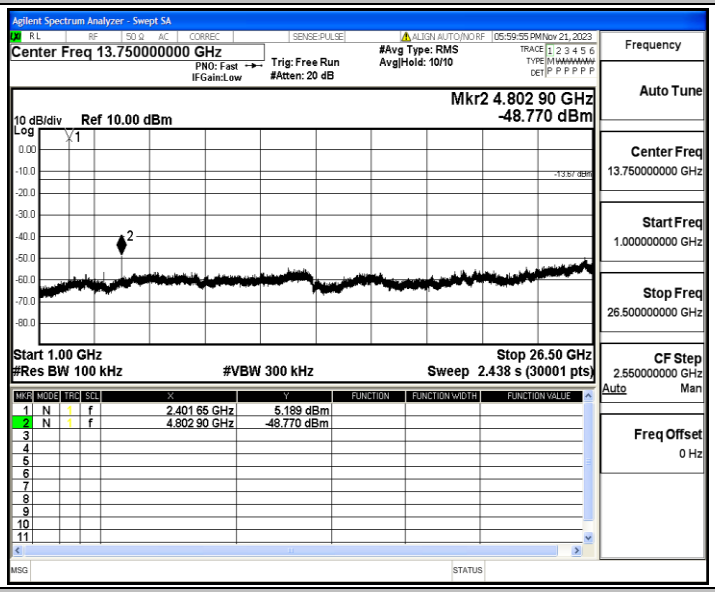
BLE_2M_Ant1_2402_0~Reference



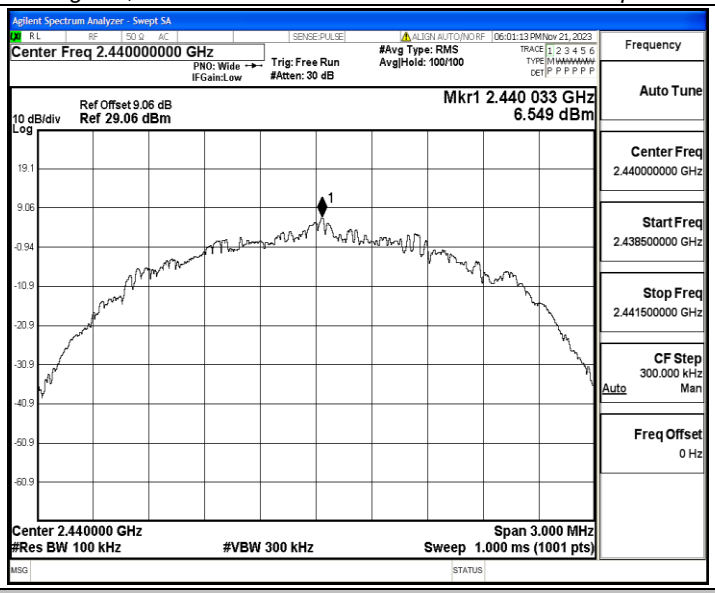
BLE_2M_Ant1_2402_30~1000



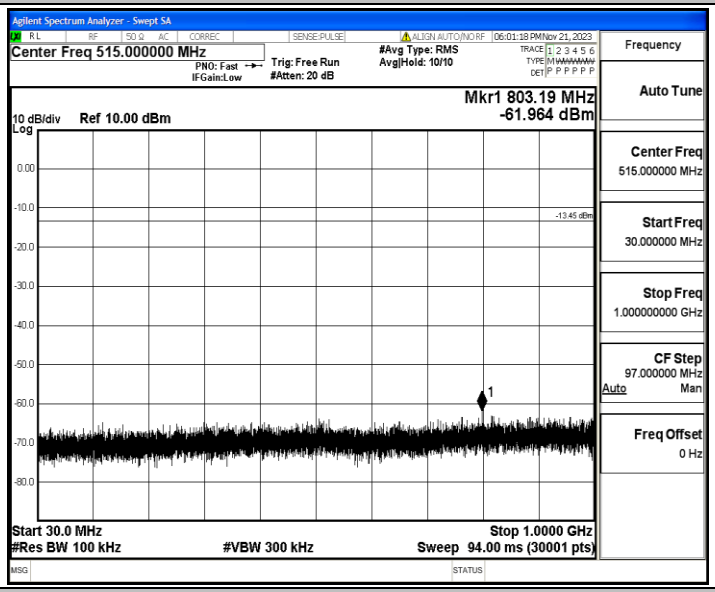
BLE_2M_Ant1_2402_1000~26500



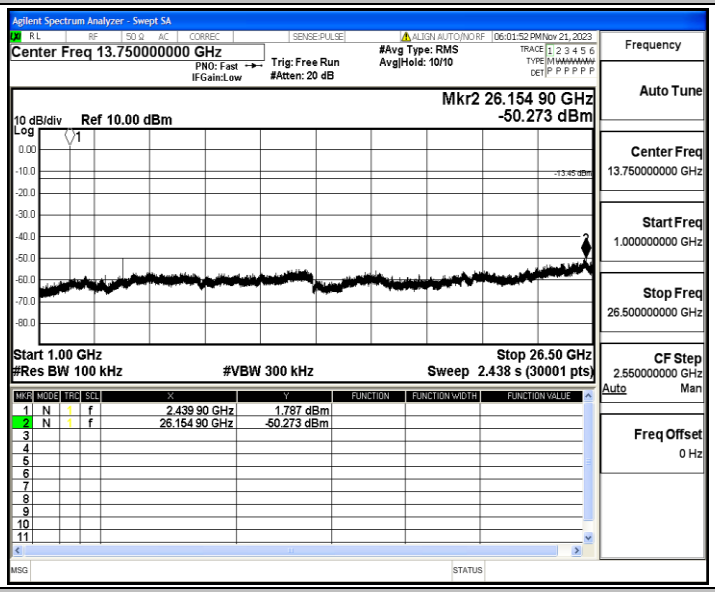
BLE_2M_Ant1_2440_0~Reference



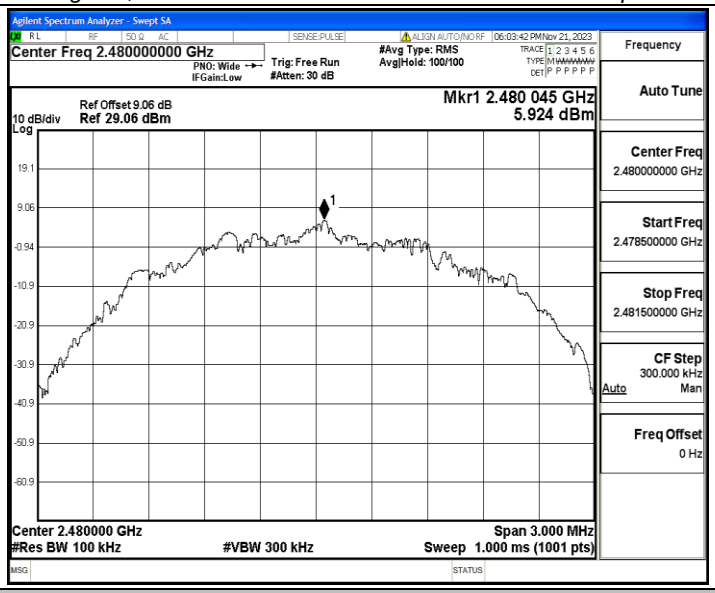
BLE_2M_Ant1_2440_30~1000



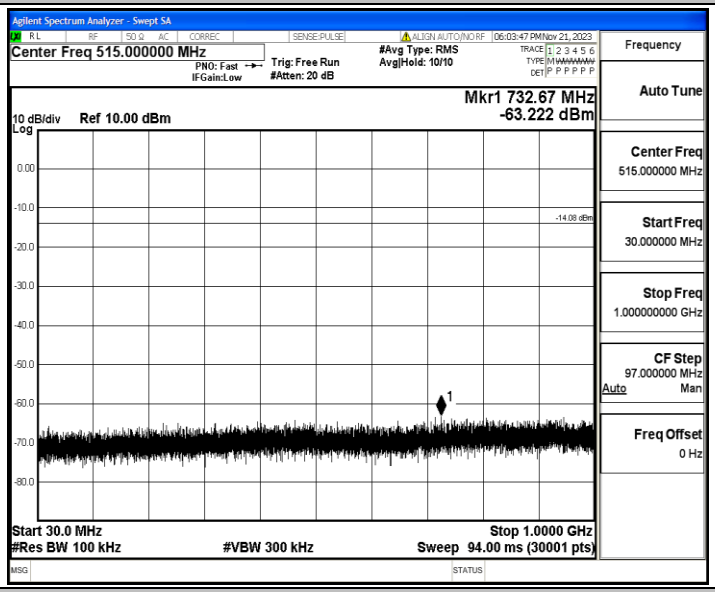
BLE_2M_Ant1_2440_1000~26500



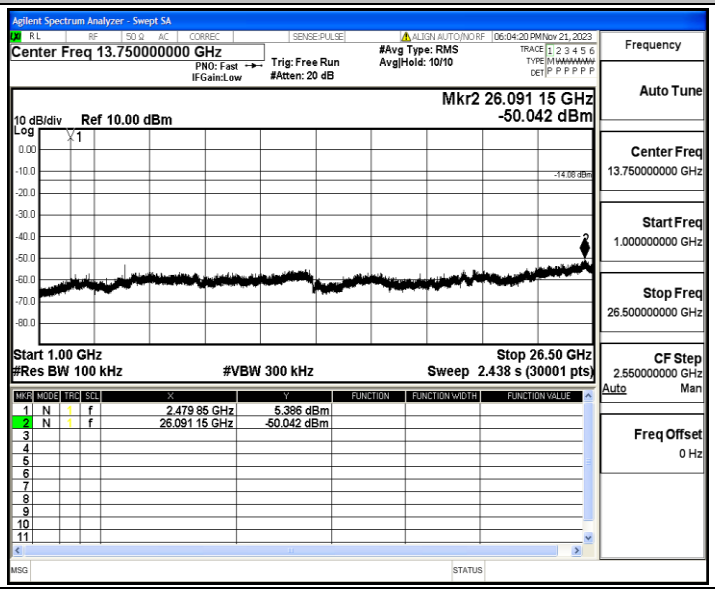
BLE_2M_Ant1_2480_0~Reference



BLE_2M_Ant1_2480_30~1000



BLE_2M_Ant1_2480_1000~26500



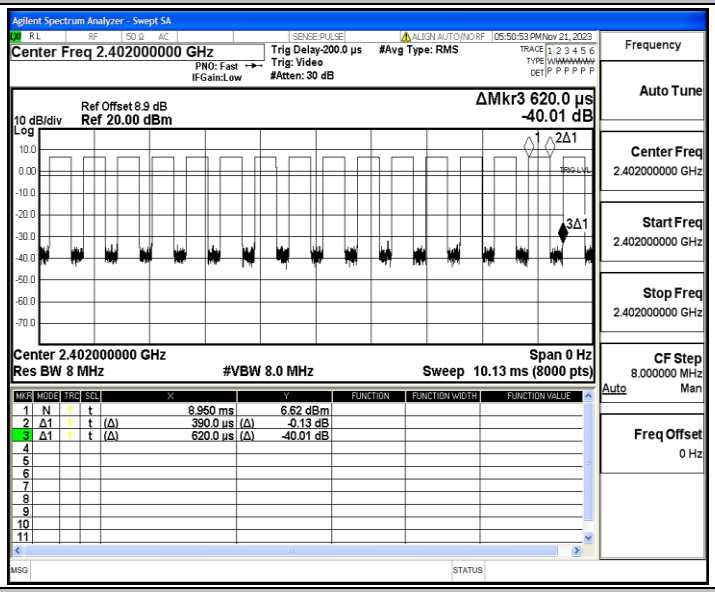
Appendix G: Duty Cycle

Test Result

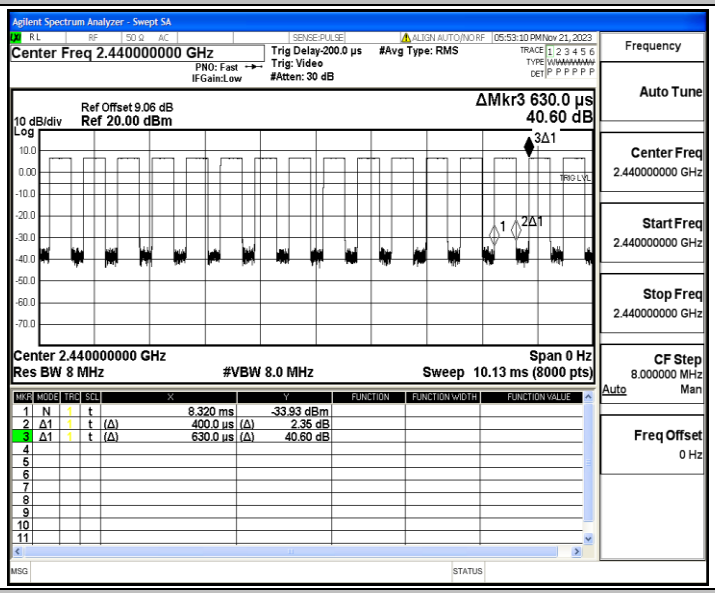
TestMode	Antenna	Channel	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	1/T[kHz]
BLE_1M	Ant1	2402	0.39	0.62	62.90	2.56
		2440	0.40	0.63	63.49	2.50
		2480	0.39	0.62	62.90	2.56
BLE_2M	Ant1	2402	0.21	0.62	33.87	4.76
		2440	0.21	0.63	33.33	4.76
		2480	0.21	0.63	33.33	4.76

Test Graphs

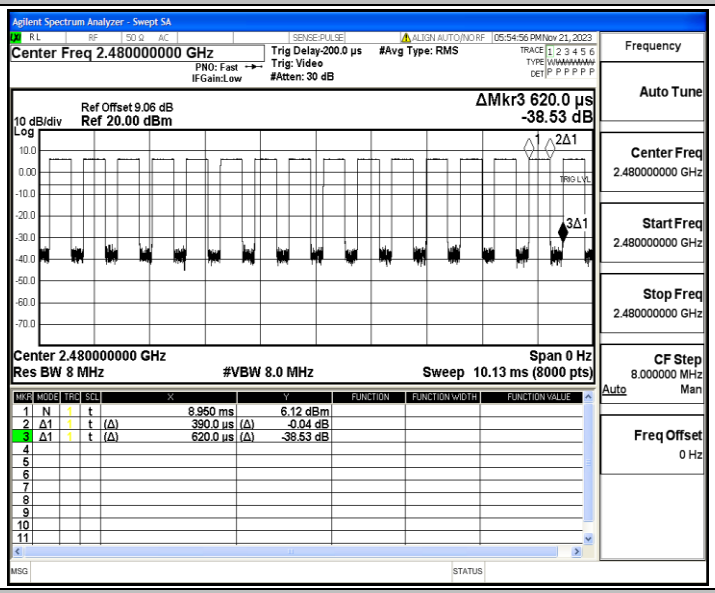
BLE_1M_Ant1_2402



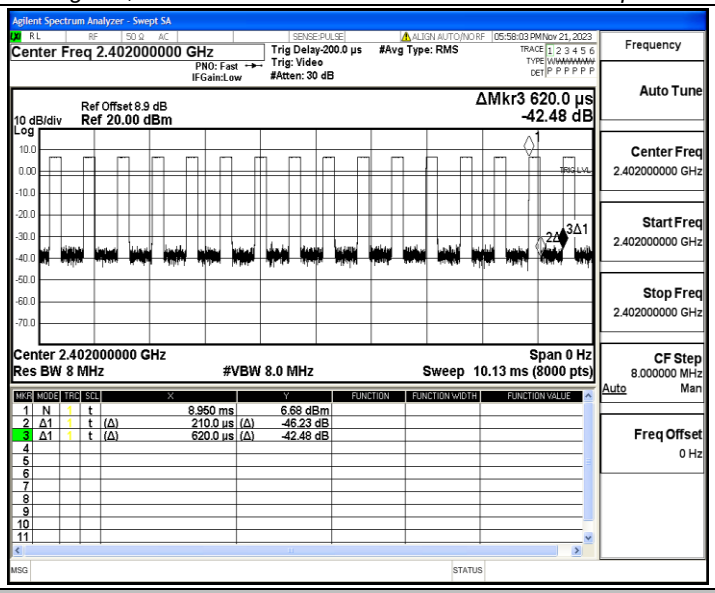
BLE_1M_Ant1_2440



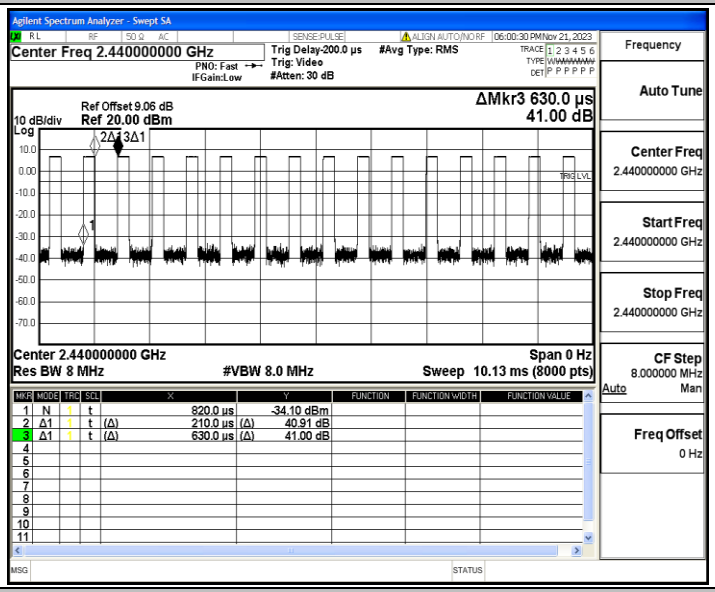
BLE_1M_Ant1_2480



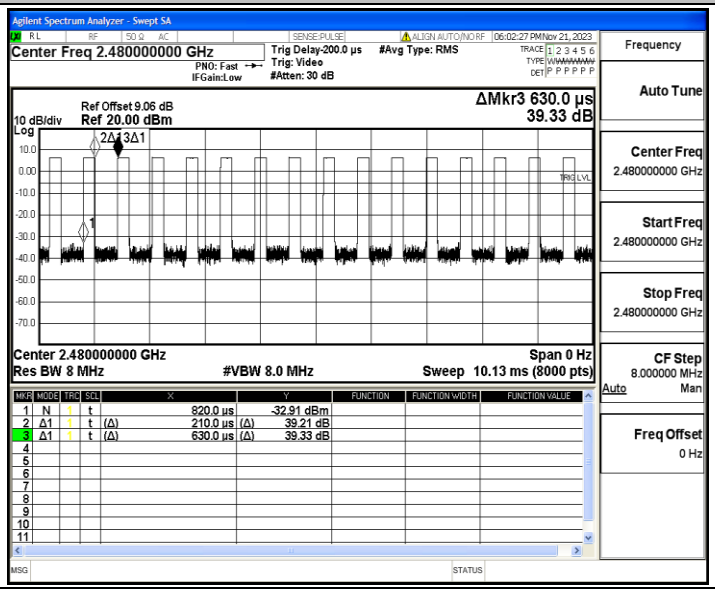
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480



Appendix H: Emissions in Restricted Bands

Test Result

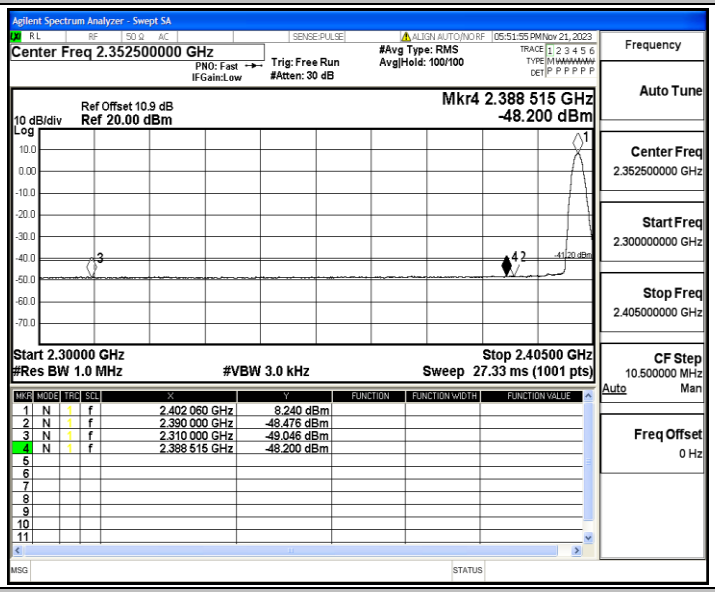
TestMode	Antenna	ChName	Channel	Detector	Freq. [MHz]	Result [dBm]	Limit [dBm]	Verdict
BLE_1M	Ant1	Low	2402	AV	2310.000	-49.05	≤-41.20	PASS
				AV	2388.515	-48.2	≤-41.20	PASS
				AV	2390.000	-48.48	≤-41.20	PASS
				Peak	2310.000	-42.11	≤-21.20	PASS
				Peak	2385.365	-38.86	≤-21.20	PASS
				Peak	2390.000	-42.03	≤-21.20	PASS
		High	2480	AV	2483.500	-45.53	≤-41.20	PASS
				AV	2483.520	-45.53	≤-41.20	PASS
				AV	2500.000	-48.01	≤-41.20	PASS
				Peak	2483.500	-40.64	≤-21.20	PASS
				Peak	2499.520	-38.25	≤-21.20	PASS
				Peak	2500.000	-42.14	≤-21.20	PASS
BLE_2M	Ant1	Low	2402	AV	2310.000	-48.61	≤-41.20	PASS
				AV	2363.525	-47.17	≤-41.20	PASS
				AV	2390.000	-47.96	≤-41.20	PASS
				Peak	2310.000	-41.29	≤-21.20	PASS
				Peak	2387.570	-38.66	≤-21.20	PASS
				Peak	2390.000	-41.14	≤-21.20	PASS
		High	2480	AV	2483.500	-42.64	≤-41.20	PASS
				AV	2483.520	-42.64	≤-41.20	PASS
				AV	2500.000	-47.65	≤-41.20	PASS
				Peak	2483.500	-40.98	≤-21.20	PASS
				Peak	2485.360	-38.99	≤-21.20	PASS
				Peak	2500.000	-41.41	≤-21.20	PASS

Note：

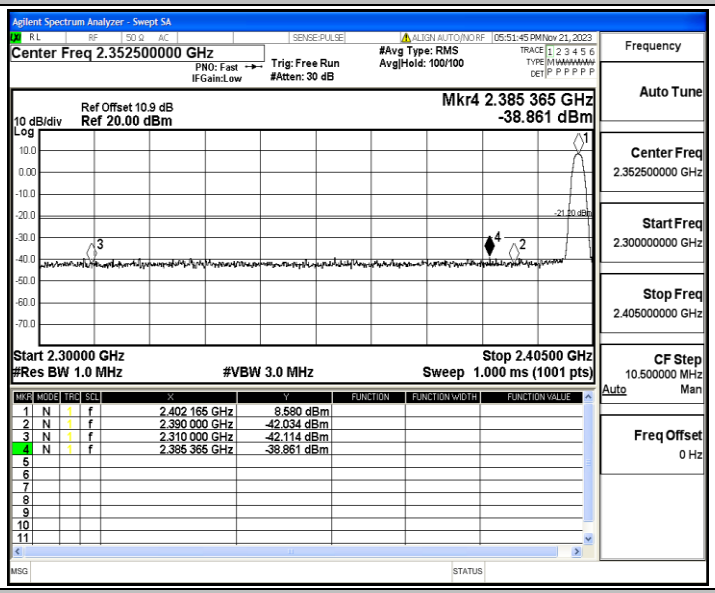
1. The Antenna Gain is compensated in the graph with 2dBi and Antenna Gain which is Higher.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

Test Graphs

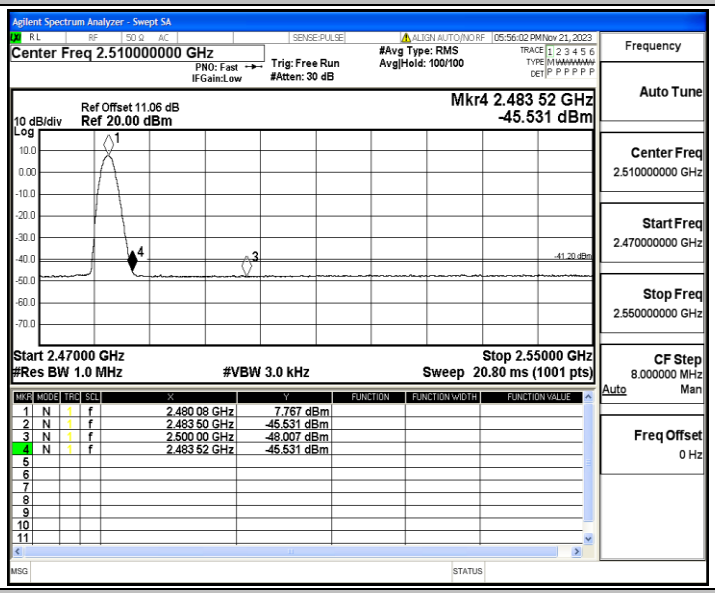
BLE_1M_Ant1_Low_2402_AV



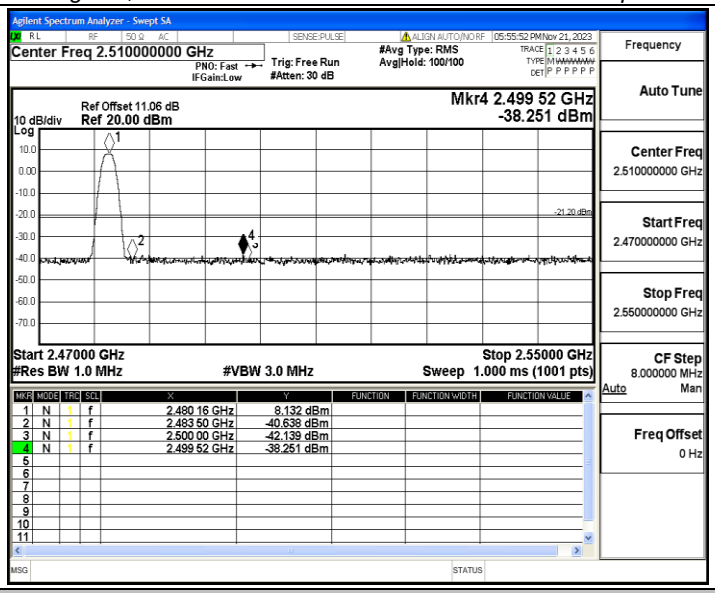
BLE_1M_Ant1_Low_2402_Peak



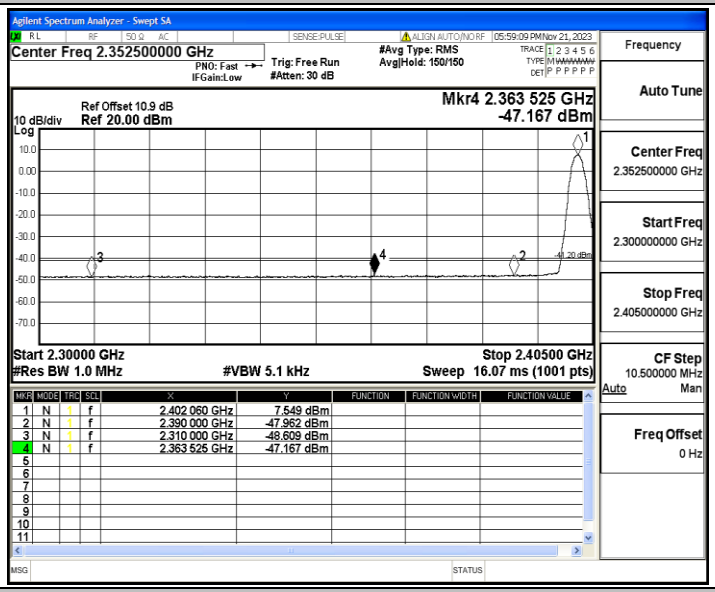
BLE_1M_Ant1_High_2480_AV



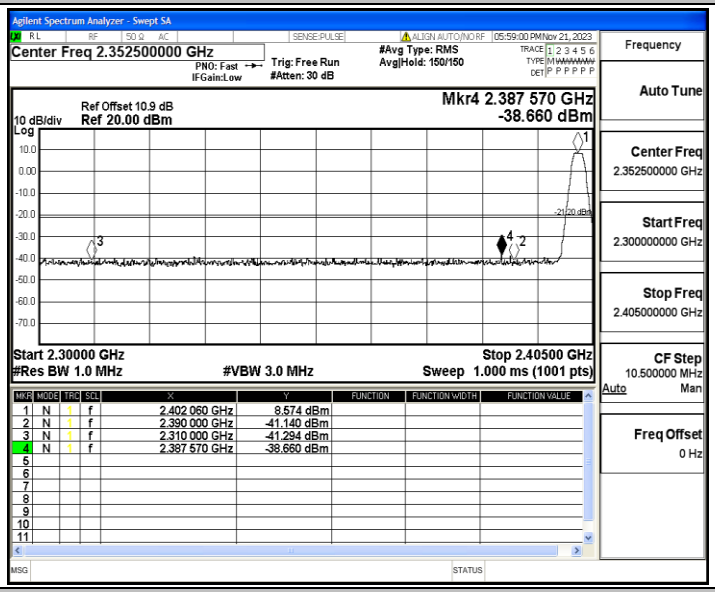
BLE_1M_Ant1_High_2480_Peak



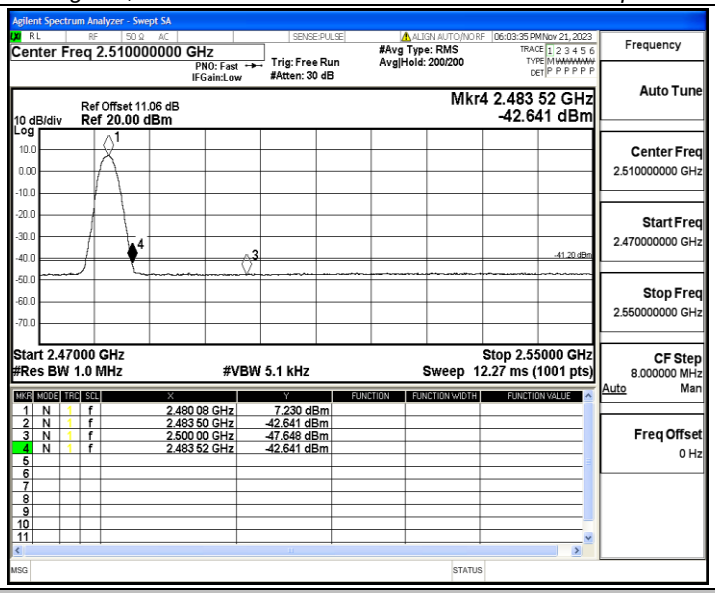
BLE_2M_Ant1_Low_2402_AV



BLE_2M_Ant1_Low_2402_Peak



BLE_2M_Ant1_High_2480_AV



BLE_2M_Ant1_High_2480_Peak