Appendix B

RF Test Data for BT LE (Conducted Measurement)

Product Name: Handheld Controller

Test Model: iHand55

Environmental Conditions

Temperature:	23.8° C
Relative Humidity:	52.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Taylor Hu
	Nick Peng
Supervised by:	Ling Zhu
	Ling.Zhu

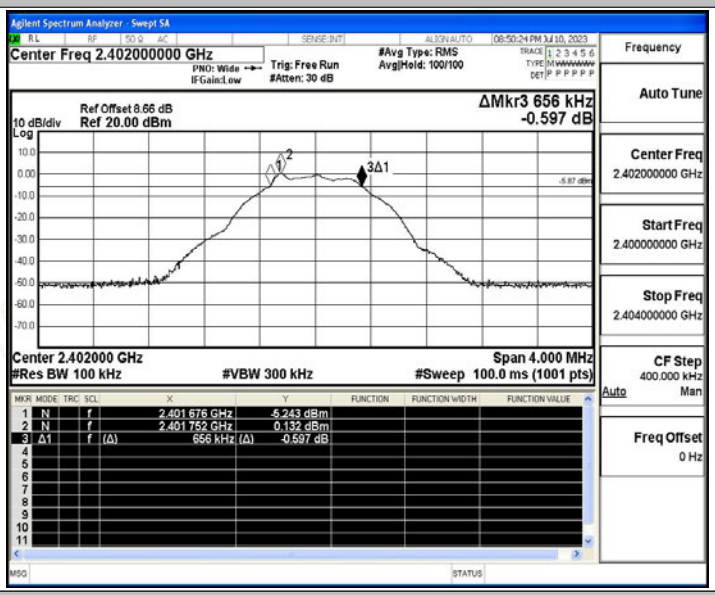
B.1 DTS Bandwidth

Test Result

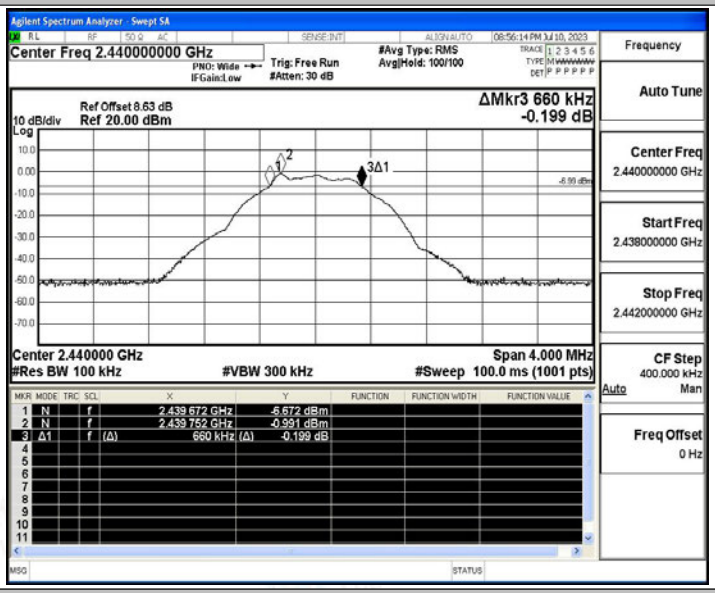
TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.656	2401.676	2402.332	0.5	PASS
		2440	0.660	2439.672	2440.332	0.5	PASS
		2480	0.664	2479.668	2480.332	0.5	PASS
BLE_2M	Ant1	2402	1.124	2401.424	2402.548	0.5	PASS
		2440	1.128	2439.420	2440.548	0.5	PASS
		2480	1.124	2479.424	2480.548	0.5	PASS

Test Graphs

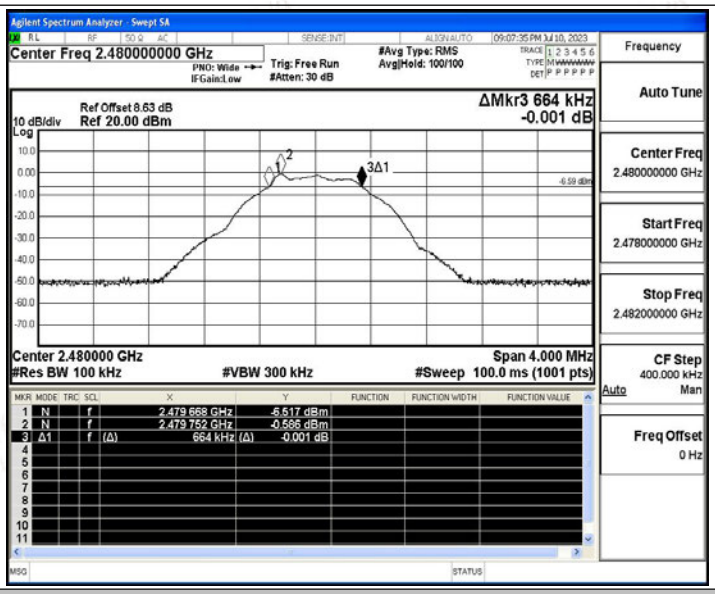
BLE_1M_Ant1_2402



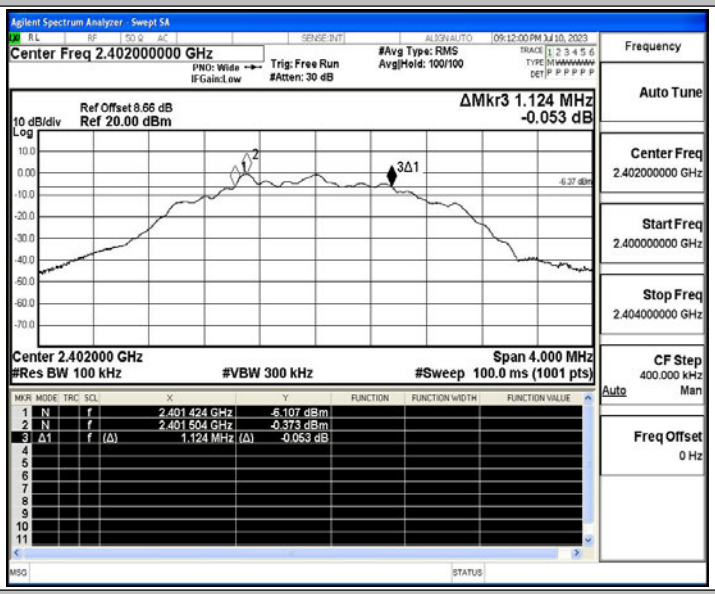
BLE_1M_Ant1_2440



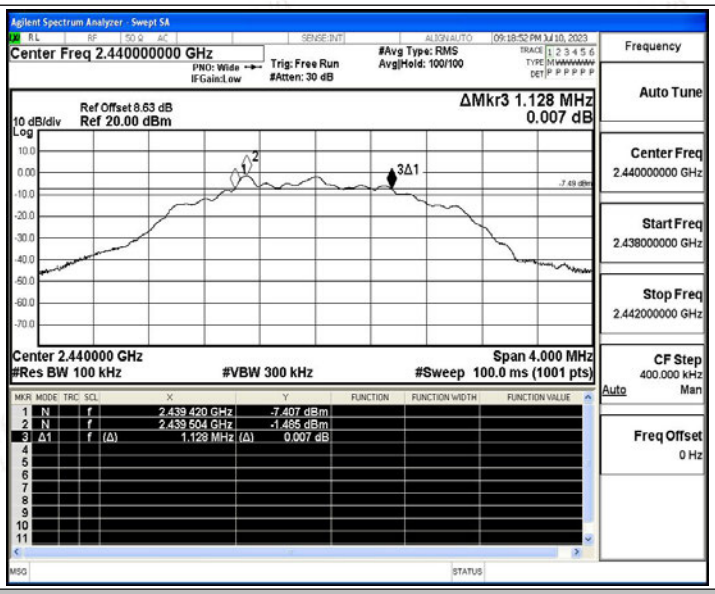
BLE_1M_Ant1_2480



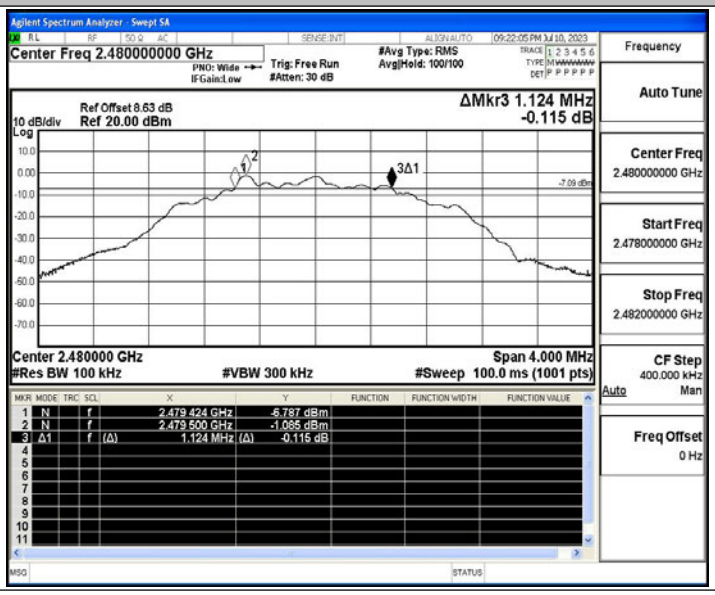
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480



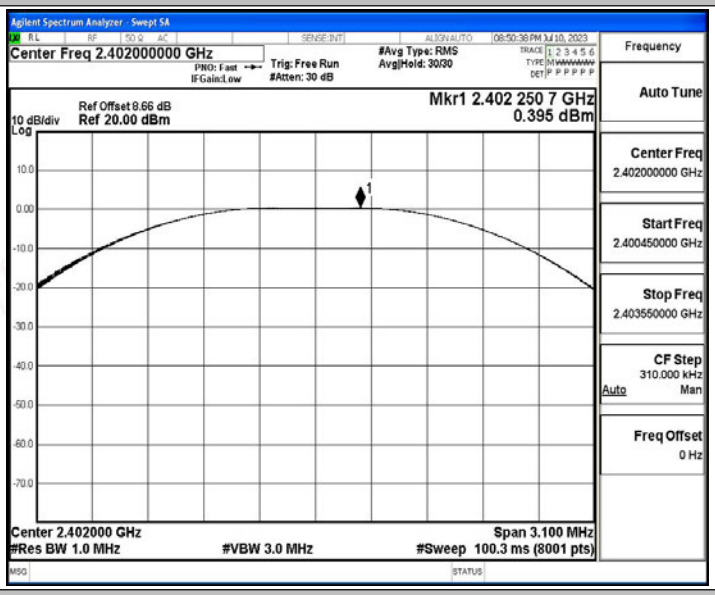
B.2 Maximum conducted output power

Test Result

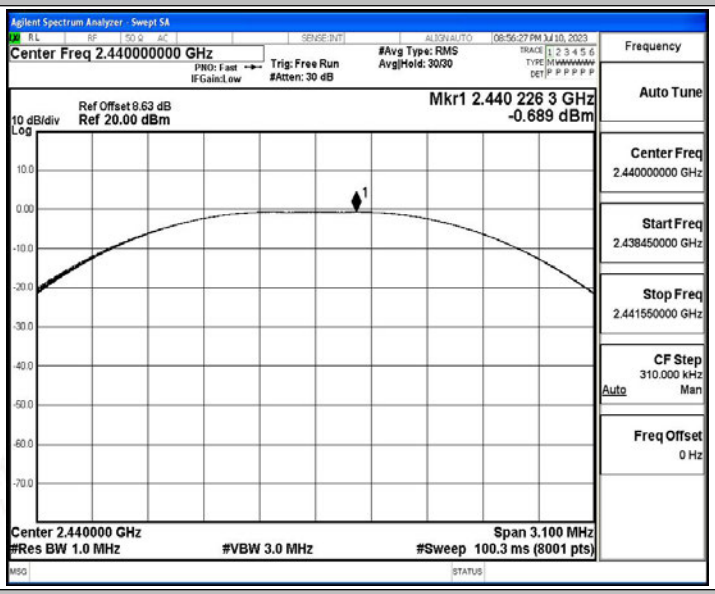
TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	0.4	≤30	PASS
		2440	-0.69	≤30	PASS
		2480	-0.31	≤30	PASS
BLE_2M	Ant1	2402	0.42	≤30	PASS
		2440	-0.66	≤30	PASS
		2480	-0.31	≤30	PASS

Test Graphs

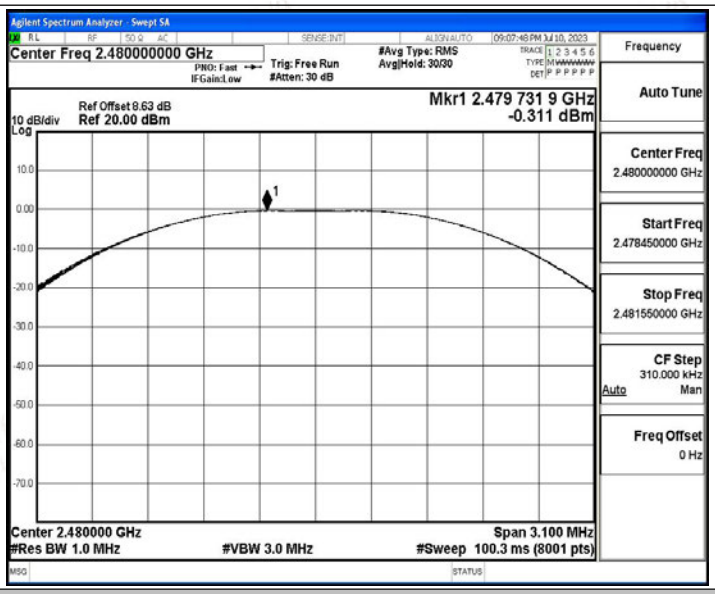
BLE_1M_Ant1_2402



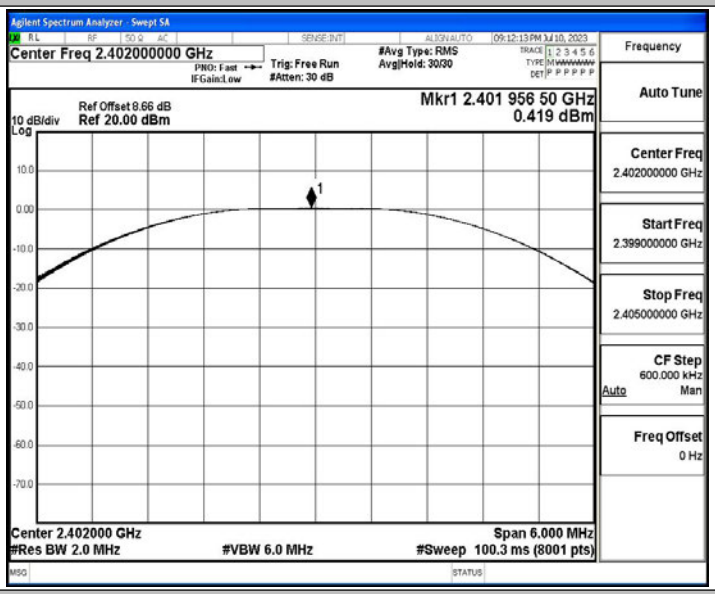
BLE_1M_Ant1_2440



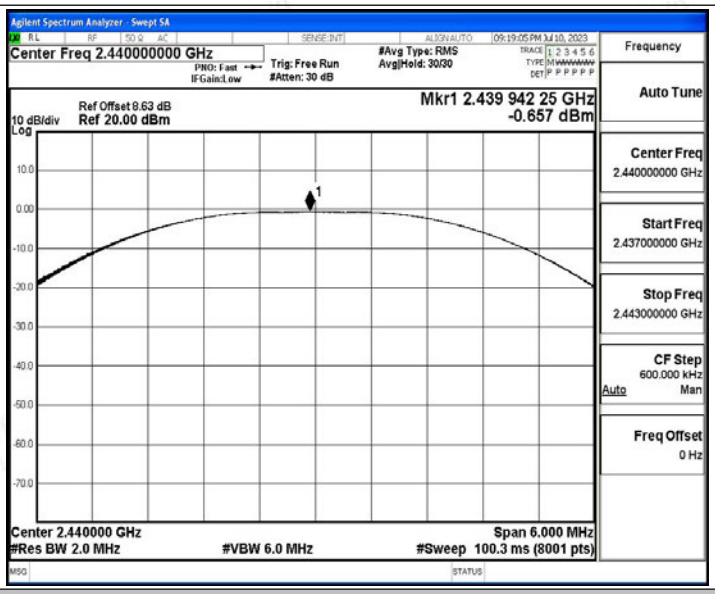
BLE_1M_Ant1_2480



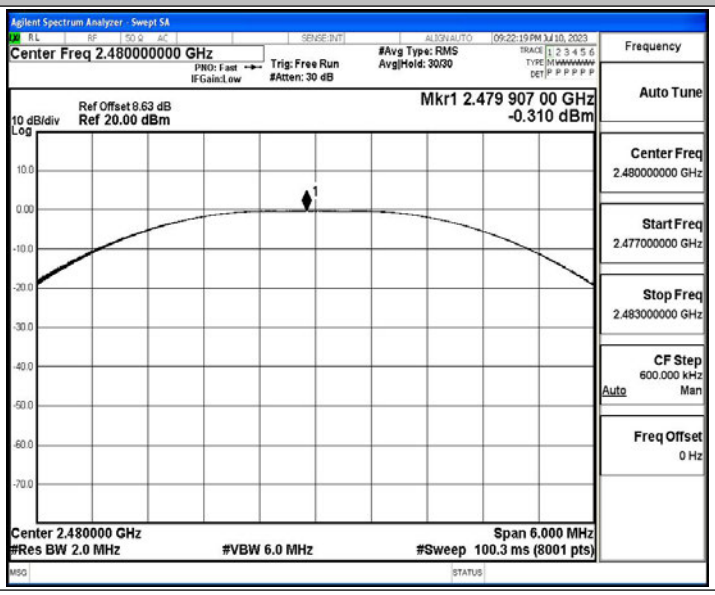
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480



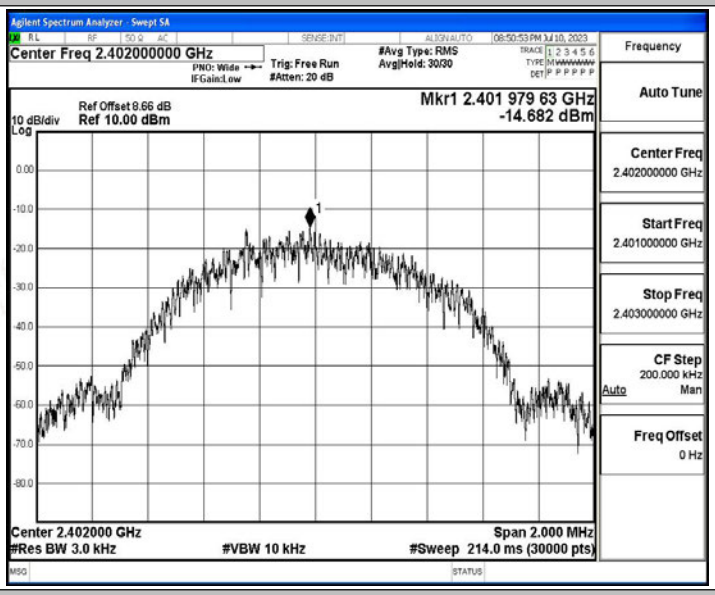
B.3 Maximum power spectral density

Test Result

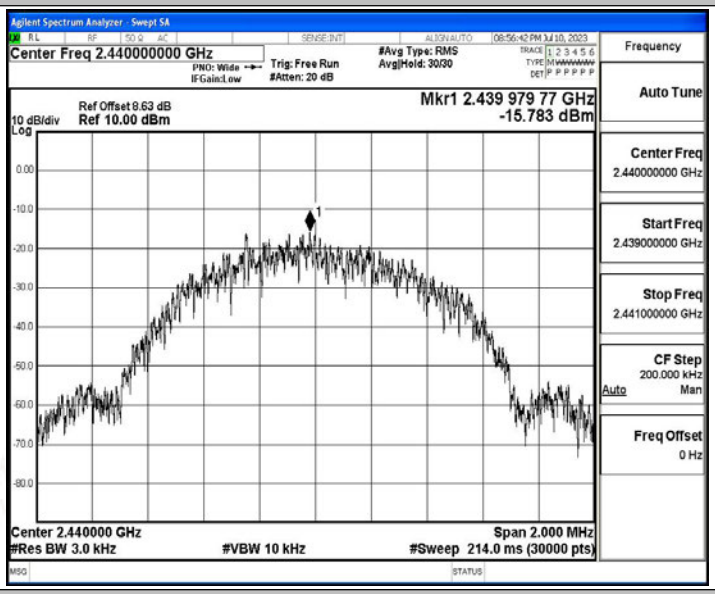
TestMode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-14.68	≤8.00	PASS
		2440	-15.78	≤8.00	PASS
		2480	-15.41	≤8.00	PASS
BLE_2M	Ant1	2402	-17.1	≤8.00	PASS
		2440	-17.74	≤8.00	PASS
		2480	-17.48	≤8.00	PASS

Test Graphs

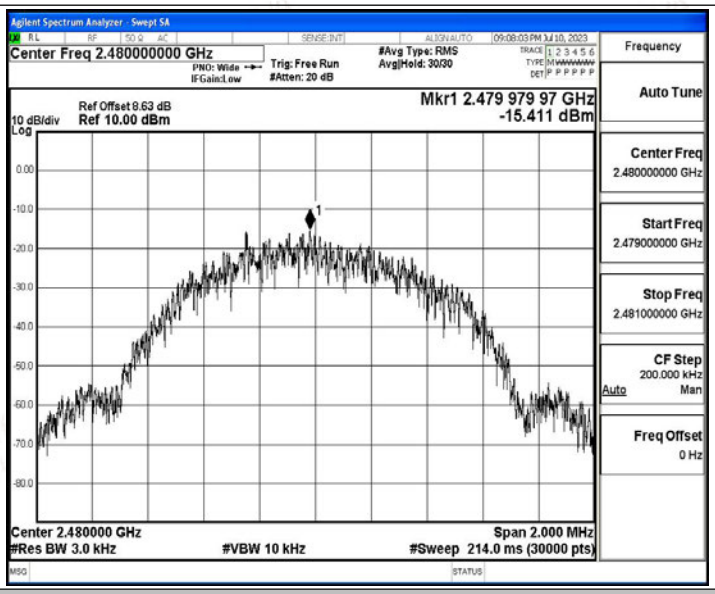
BLE_1M_Ant1_2402



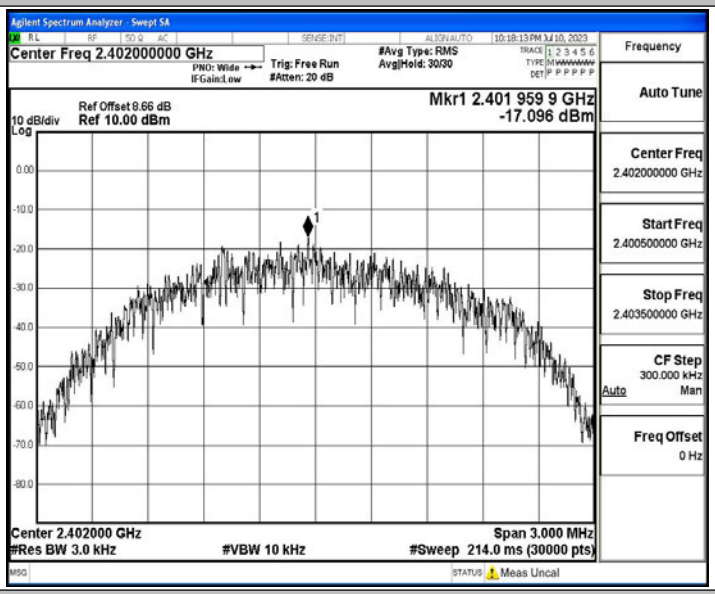
BLE_1M_Ant1_2440



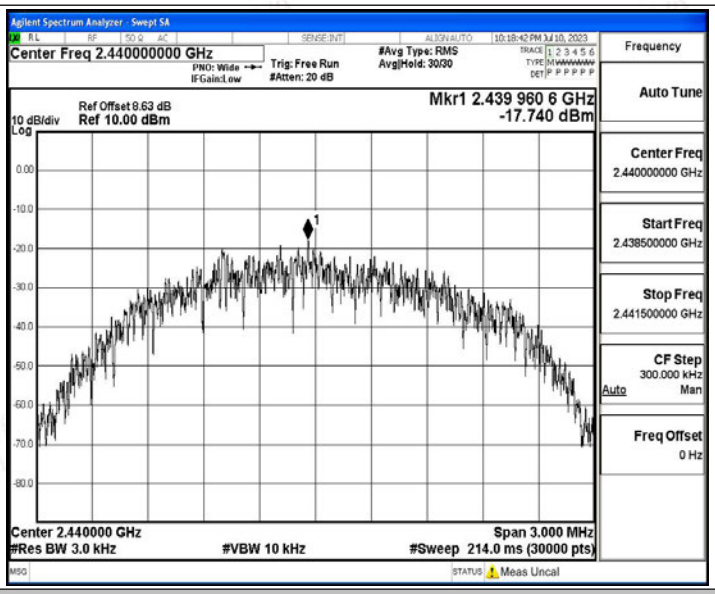
BLE_1M_Ant1_2480



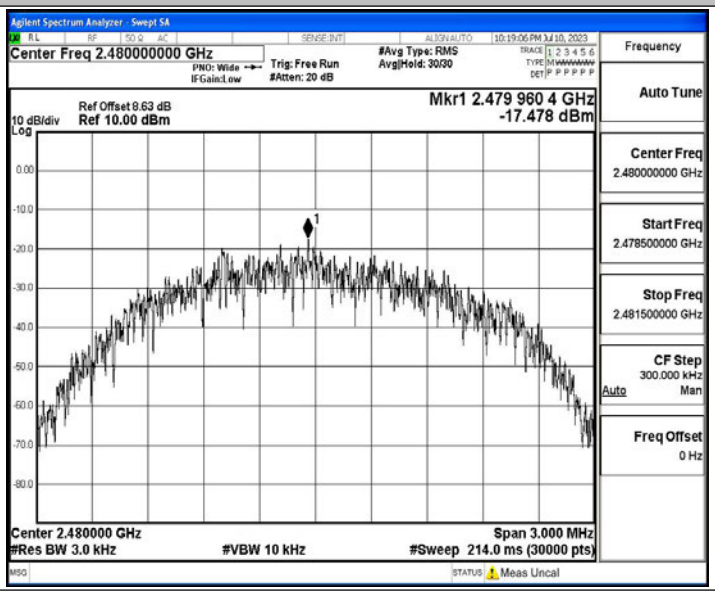
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480



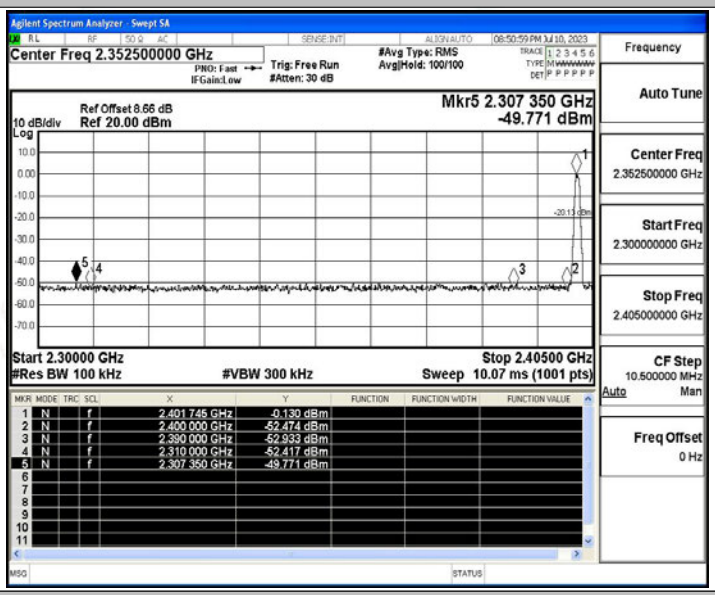
B.4 Band edge measurements

Test Result

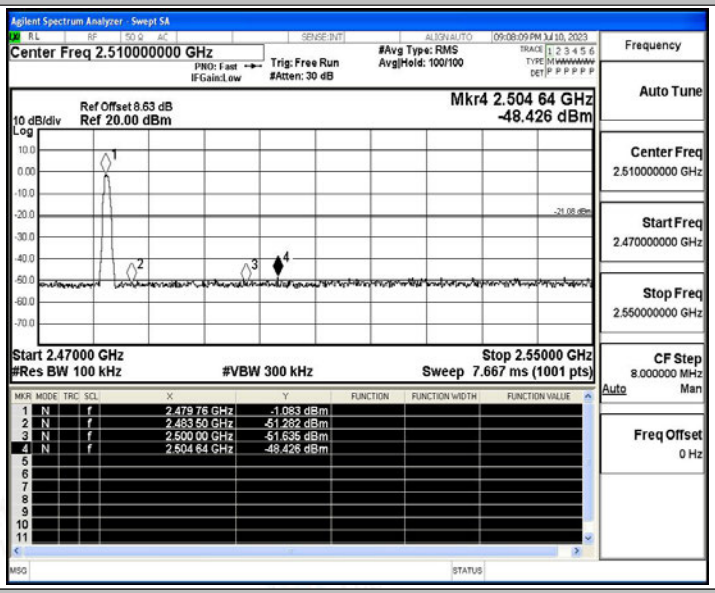
TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	-0.13	-49.77	≤-20.13	PASS
		High	2480	-1.08	-48.43	≤-21.08	PASS
BLE_2M	Ant1	Low	2402	-1.81	-47.53	≤-21.81	PASS
		High	2480	-1.49	-48.74	≤-21.49	PASS

Test Graphs

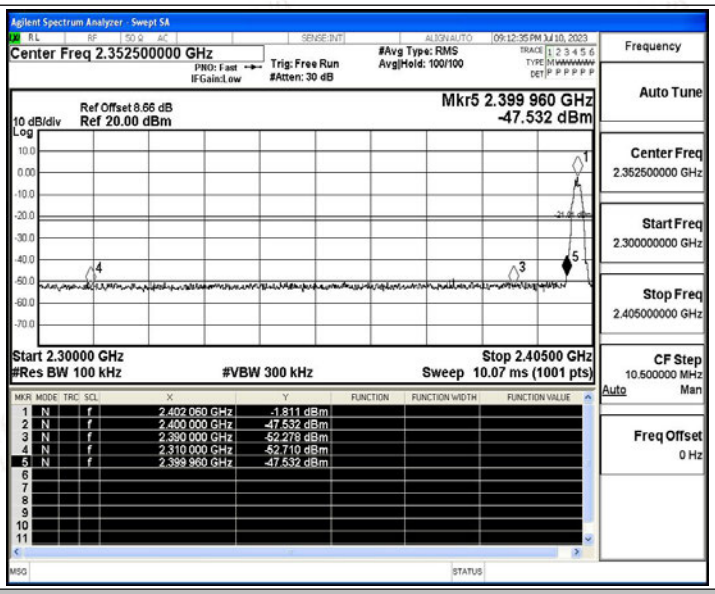
BLE_1M_Ant1_Low_2402



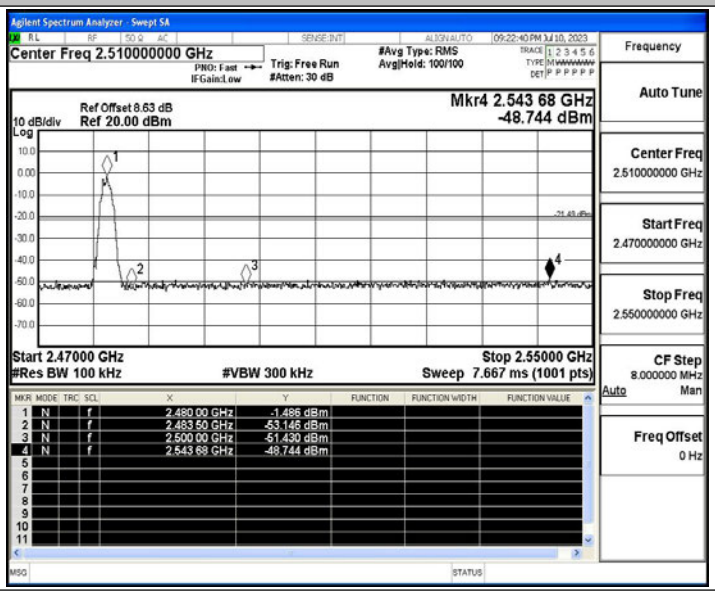
BLE_1M_Ant1_High_2480



BLE_2M_Ant1_Low_2402



BLE_2M_Ant1_High_2480



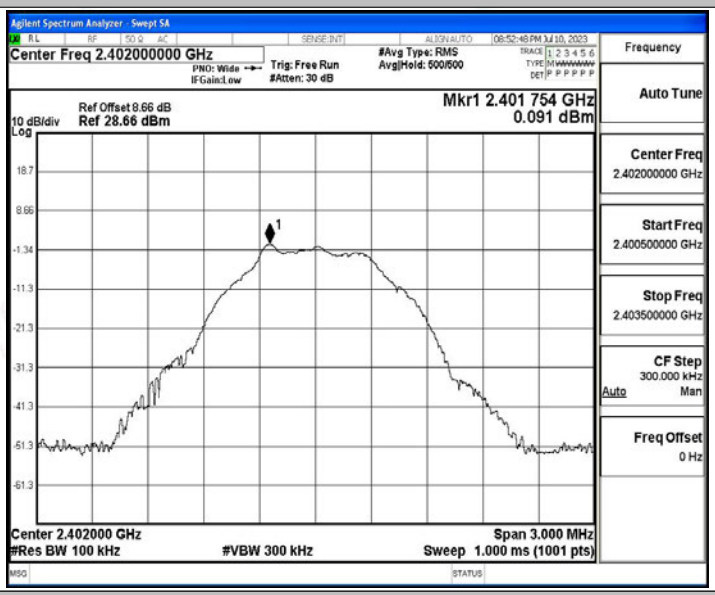
B.5 Conducted Spurious Emission

Test Result

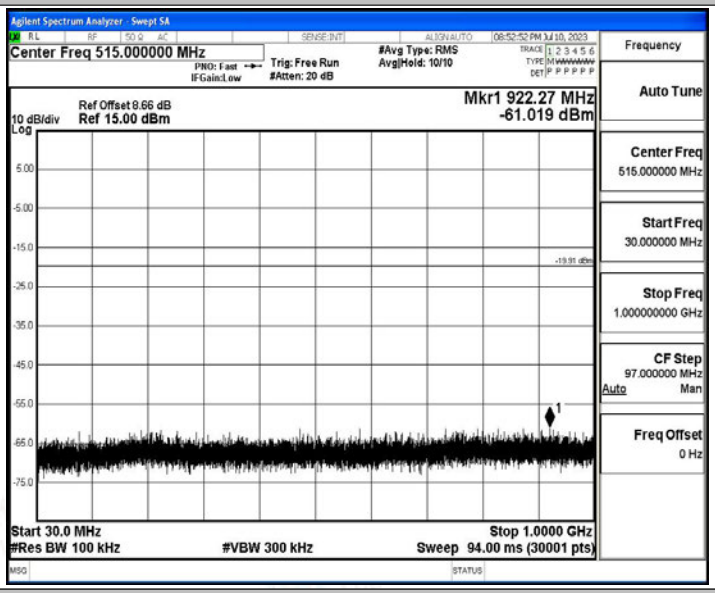
TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	0.09	0.09	---	PASS
			30~1000	0.09	-61.02	≤-19.91	PASS
			1000~26500	0.09	-46.36	≤-19.91	PASS
		2440	Reference	-1.03	-1.03	---	PASS
			30~1000	-1.03	-60.74	≤-21.03	PASS
			1000~26500	-1.03	-47	≤-21.03	PASS
		2480	Reference	-0.59	-0.59	---	PASS
			30~1000	-0.59	-61.65	≤-20.59	PASS
			1000~26500	-0.59	-45.77	≤-20.59	PASS
BLE_2M	Ant1	2402	Reference	-0.38	-0.38	---	PASS
			30~1000	-0.38	-60.65	≤-20.38	PASS
			1000~26500	-0.38	-46.84	≤-20.38	PASS
		2440	Reference	-1.51	-1.51	---	PASS
			30~1000	-1.51	-44.31	≤-21.51	PASS
			1000~26500	-1.51	-46.12	≤-21.51	PASS
		2480	Reference	-1.08	-1.08	---	PASS
			30~1000	-1.08	-61.31	≤-21.08	PASS
			1000~26500	-1.08	-46.44	≤-21.08	PASS

Test Graphs

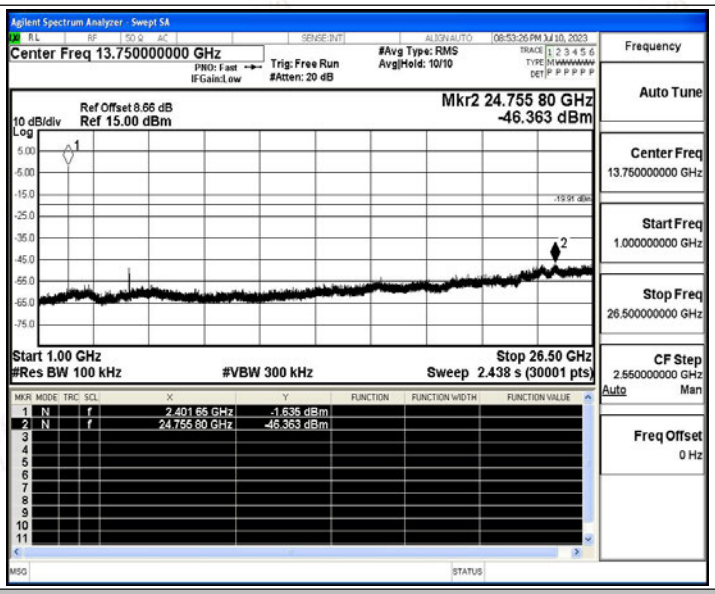
BLE_1M_Ant1_2402_0~Reference



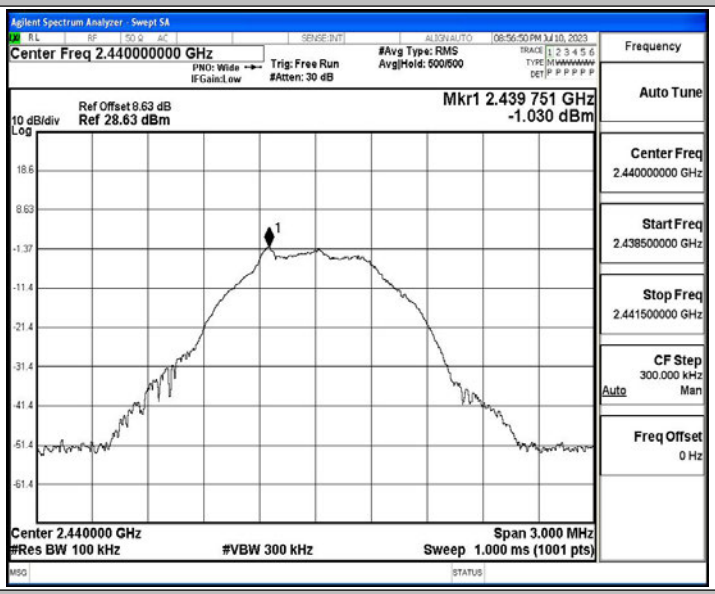
BLE_1M_Ant1_2402_30~1000



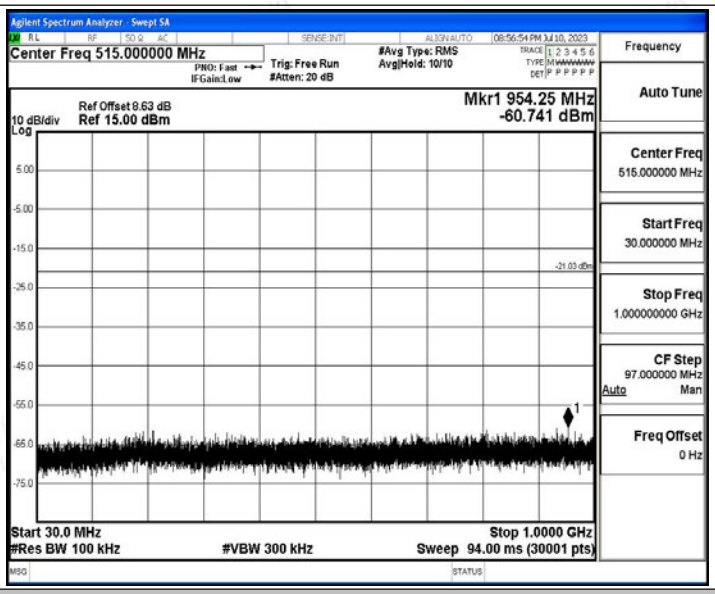
BLE_1M_Ant1_2402_1000~26500



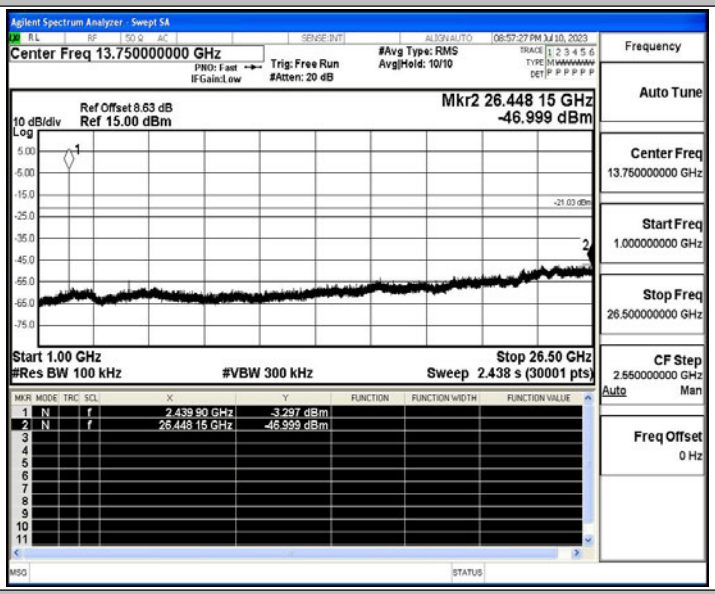
BLE_1M_Ant1_2440_0~Reference



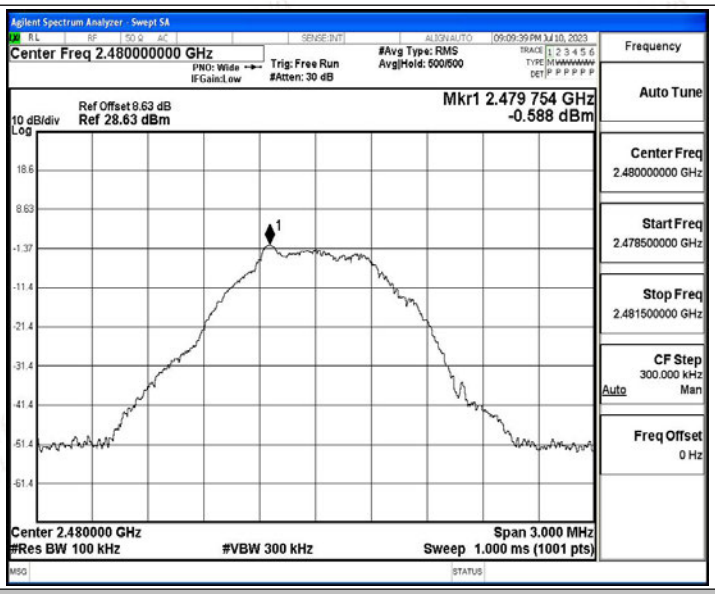
BLE_1M_Ant1_2440_30~1000



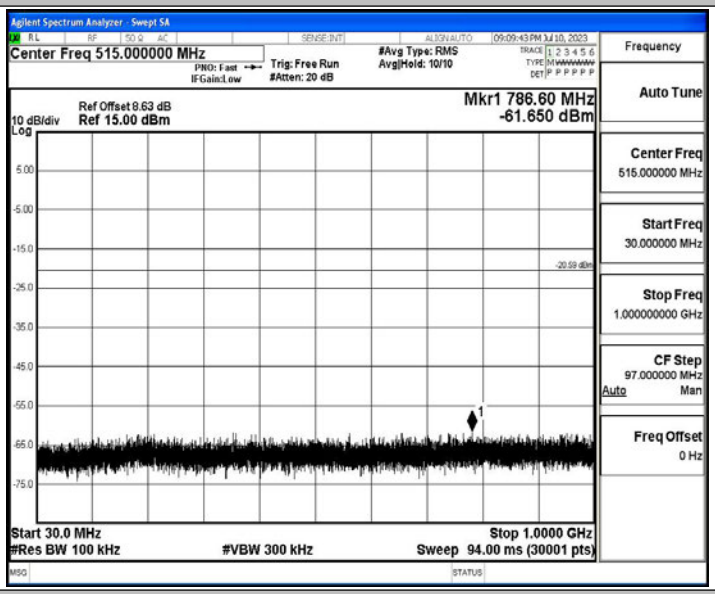
BLE_1M_Ant1_2440_1000~26500



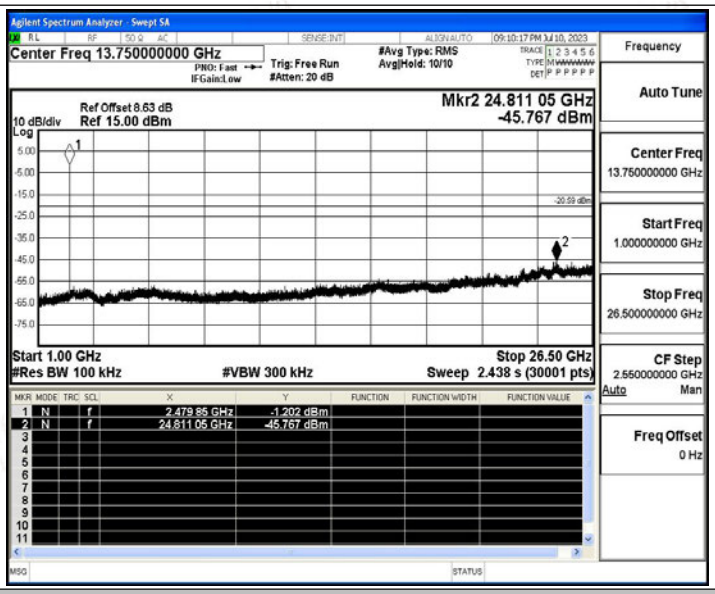
BLE_1M_Ant1_2480_0~Reference



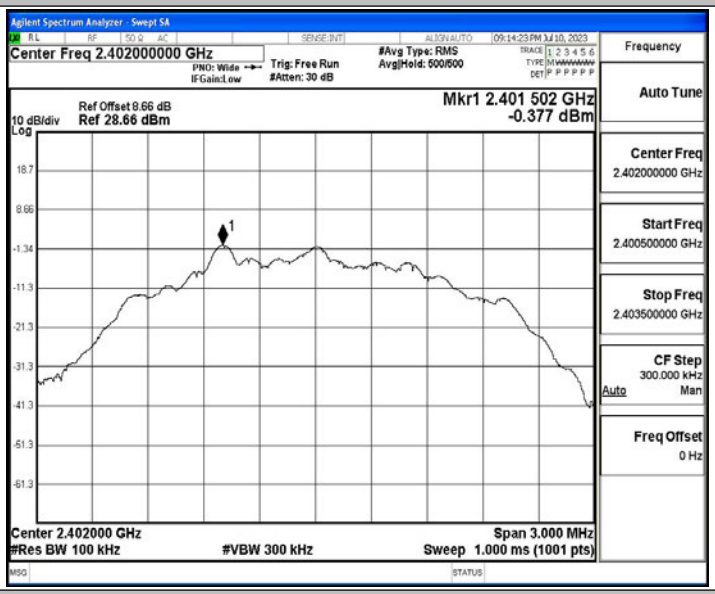
BLE_1M_Ant1_2480_30~1000



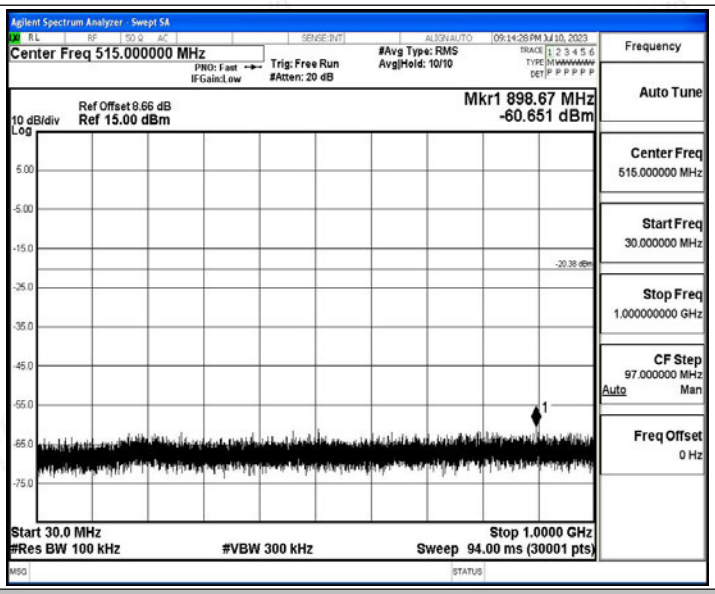
BLE_1M_Ant1_2480_1000~26500



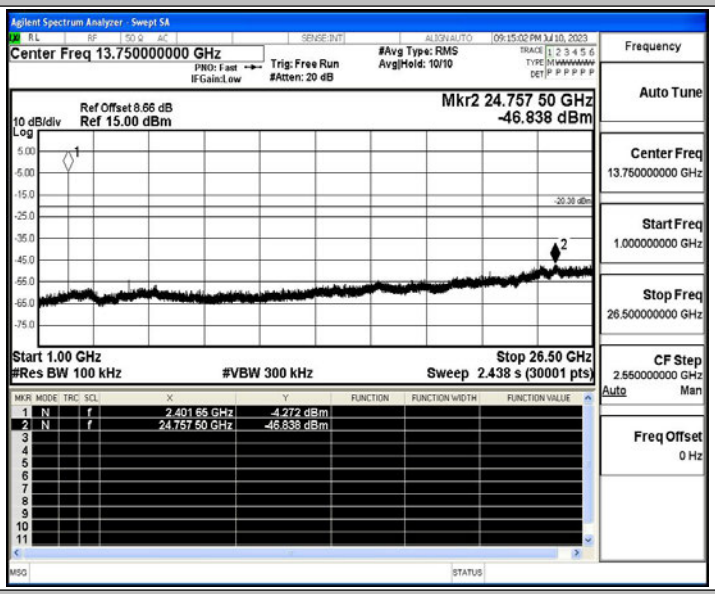
BLE_2M_Ant1_2402_0~Reference



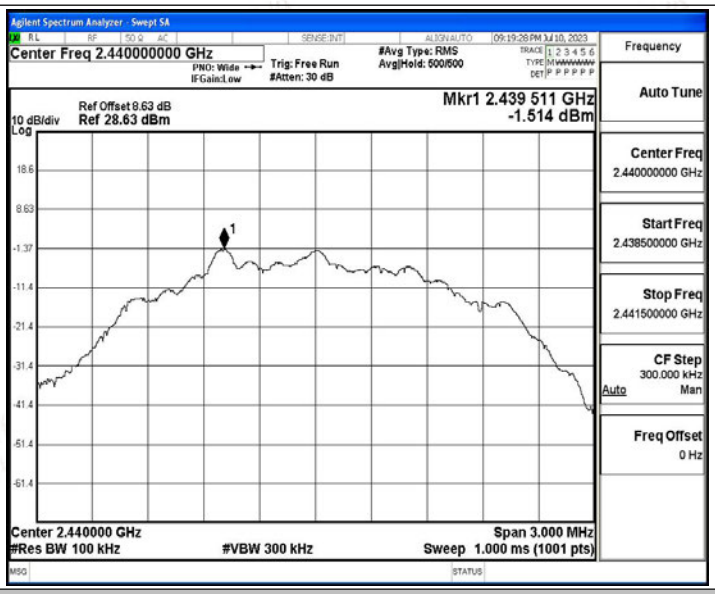
BLE_2M_Ant1_2402_30~1000



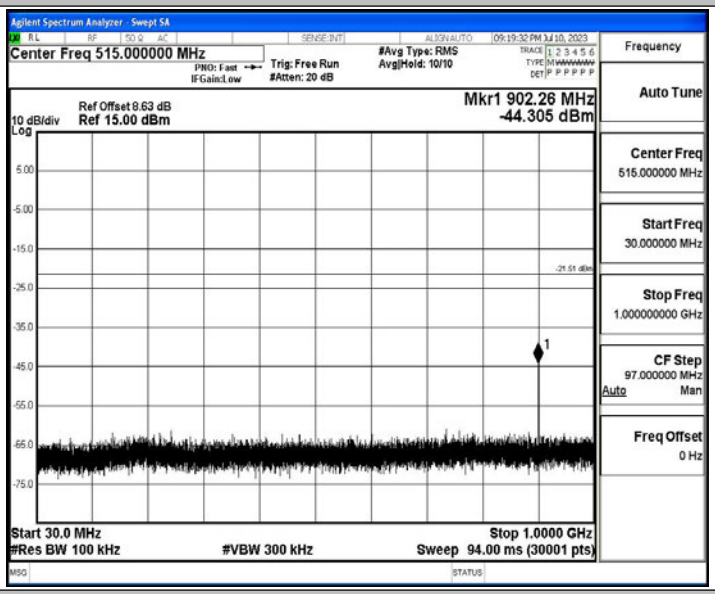
BLE_2M_Ant1_2402_1000~26500



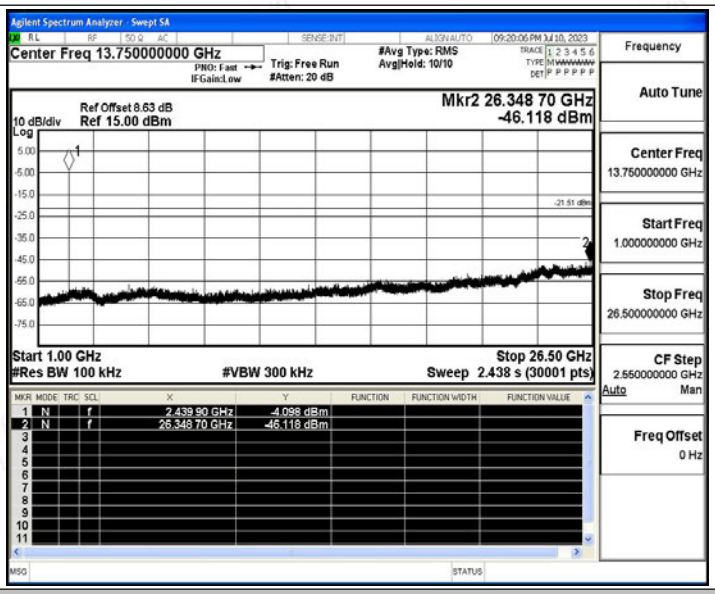
BLE_2M_Ant1_2440_0~Reference



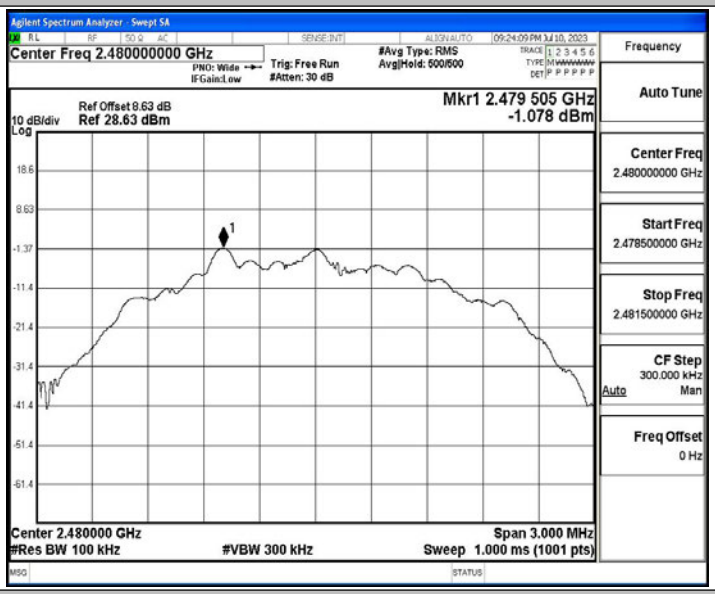
BLE_2M_Ant1_2440_30~1000



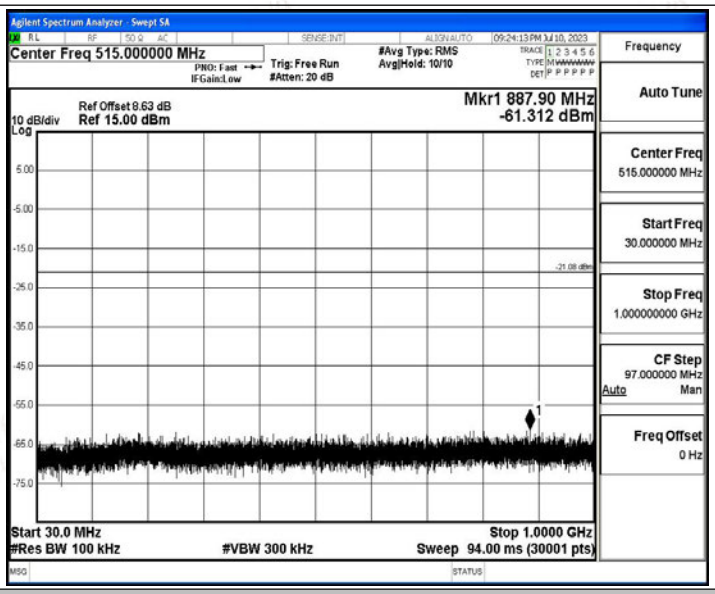
BLE_2M_Ant1_2440_1000~26500



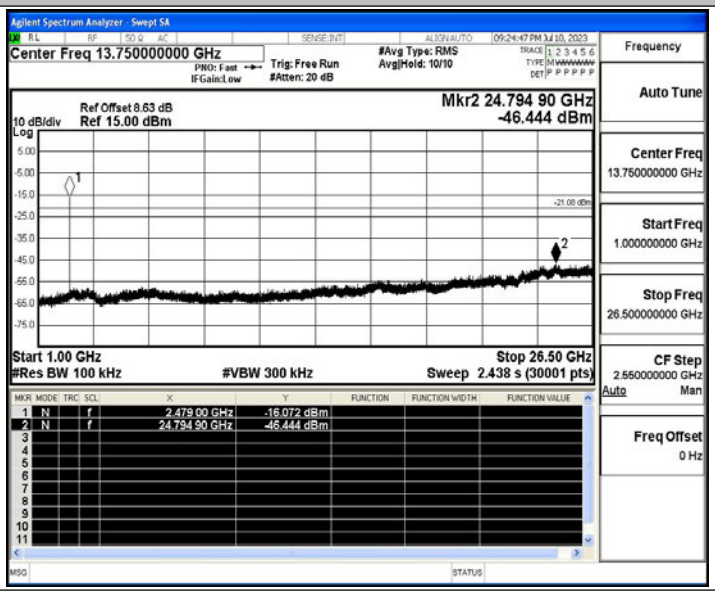
BLE_2M_Ant1_2480_0~Reference



BLE_2M_Ant1_2480_30~1000



BLE_2M_Ant1_2480_1000~26500



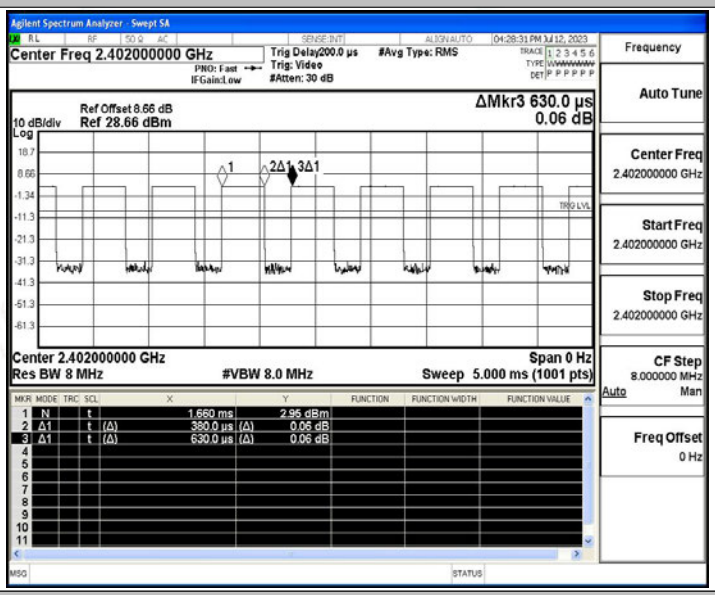
B.6 Duty Cycle

Test Result

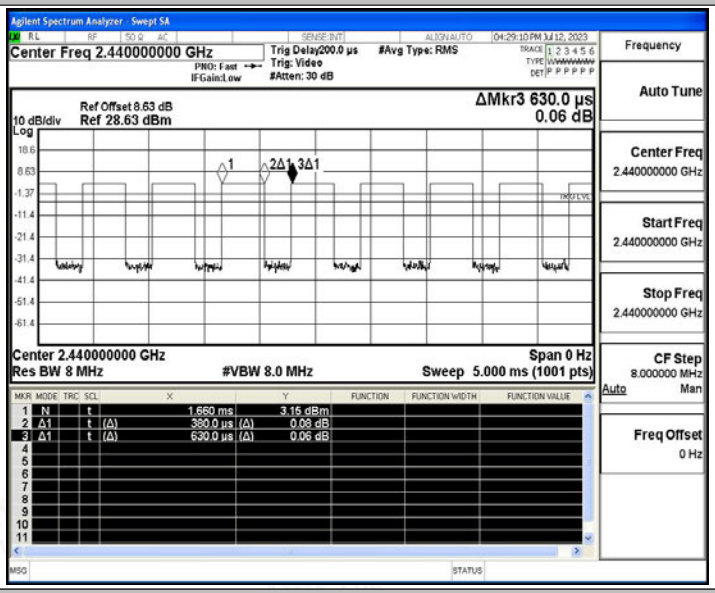
TestMode	Antenna	Channel	ON Time [ms]	Period [ms]	X	DC [%]	xFactor	1/T	Limit	Verdict
BLE_1M	Ant1	2402	0.38	0.63	0.6032	60.32	2.20	2.63	---	---
		2440	0.38	0.63	0.6032	60.32	2.20	2.63	---	---
		2480	0.38	0.63	0.6032	60.32	2.20	2.63	---	---
BLE_2M	Ant1	2402	0.38	0.63	0.6032	60.32	2.20	2.63	---	---
		2440	0.38	0.63	0.6032	60.32	2.20	2.63	---	---
		2480	0.38	0.63	0.6032	60.32	2.20	2.63	---	---

Test Graphs

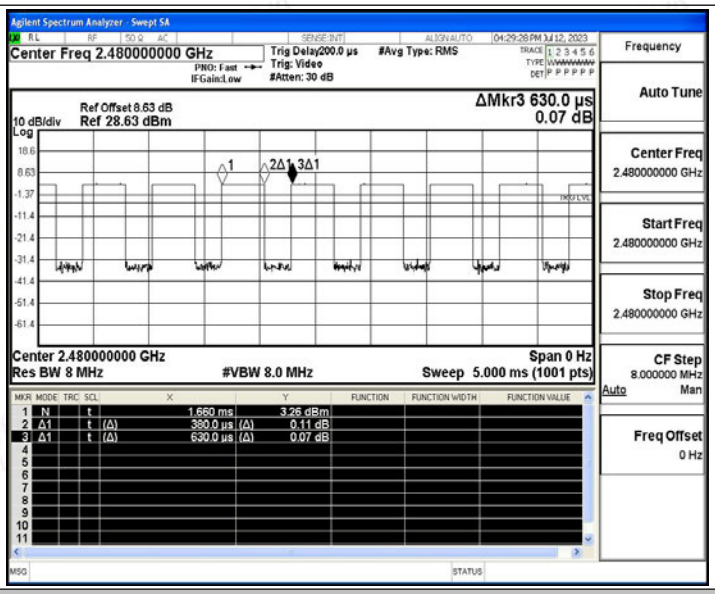
BLE_1M_Ant1_2402



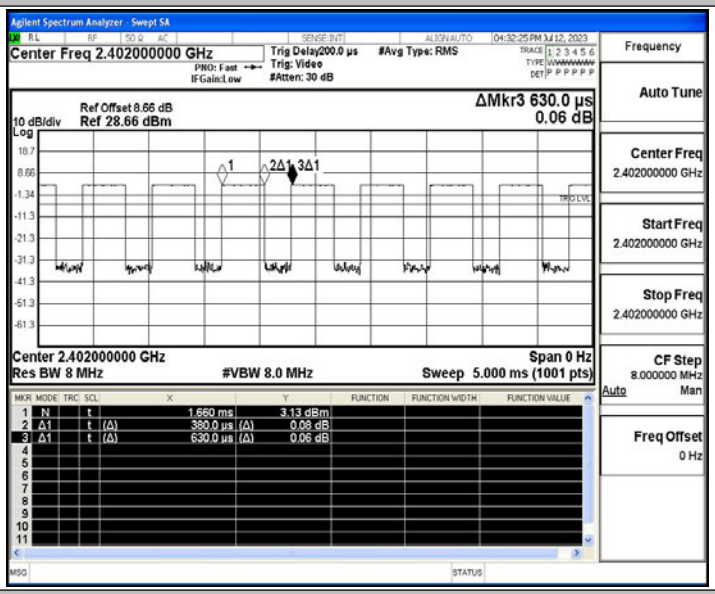
BLE_1M_Ant1_2440



BLE_1M_Ant1_2480



BLE_2M_Ant1_2402



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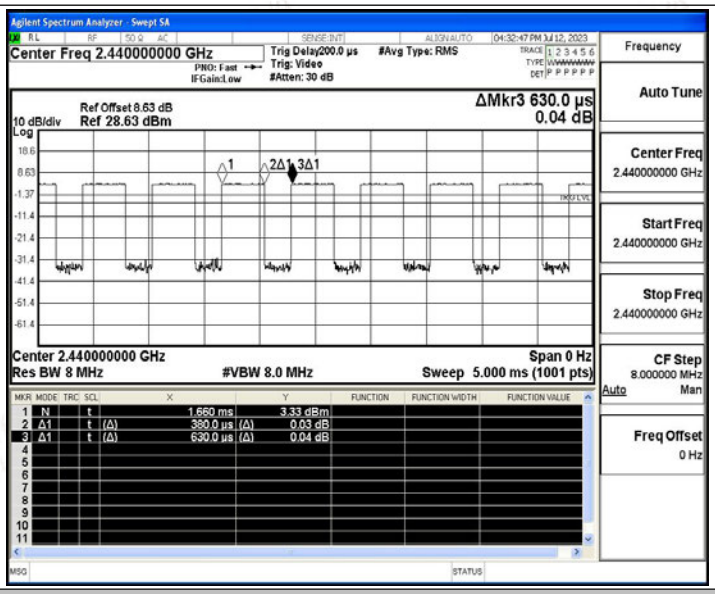

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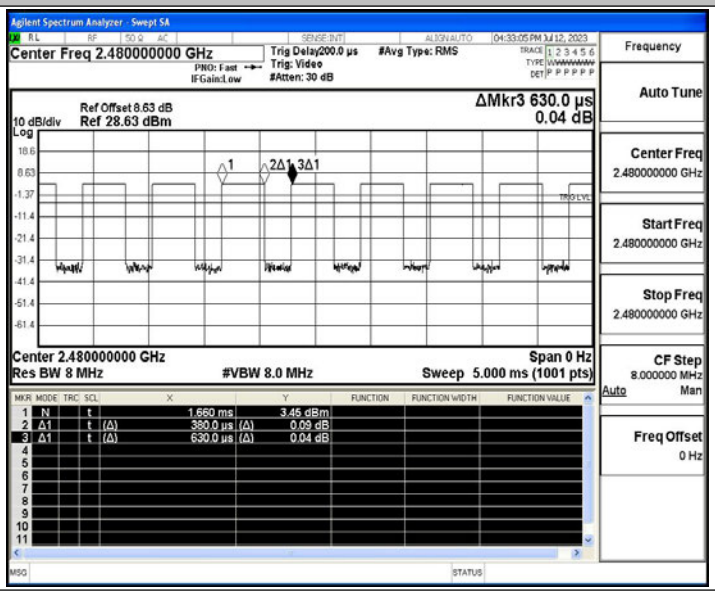


B.7 Emissions in Restricted Bands

Test Result

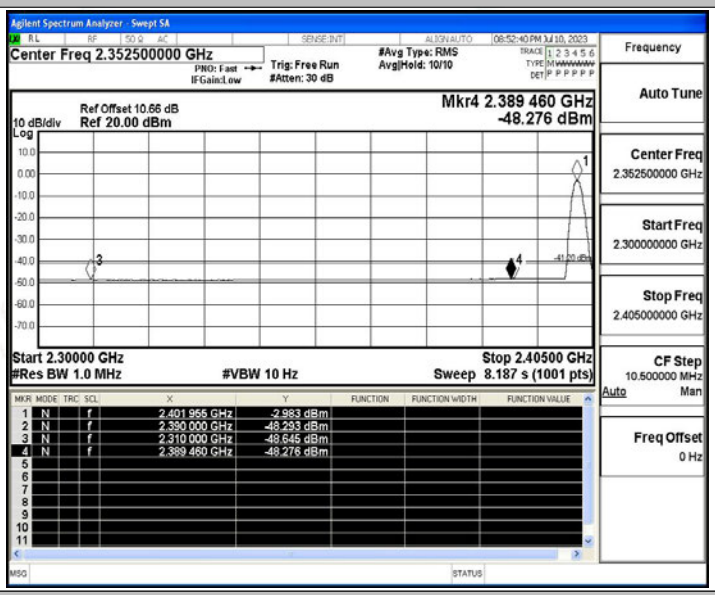
TestMode	Antenna	ChName	Channel	Detector	Freq. [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
BLE_1M	Ant1	Low	2402	AV	2310.000	-48.65	≤-41.20	46.55	≤54	PASS
				AV	2389.460	-48.28	≤-41.20	46.92	≤54	PASS
				AV	2390.000	-48.29	≤-41.20	46.91	≤54	PASS
				Peak	2310.000	-39.81	≤-21.20	55.39	≤74	PASS
				Peak	2373.500	-39.13	≤-21.20	56.07	≤74	PASS
				Peak	2390.000	-43.87	≤-21.20	51.33	≤74	PASS
		High	2480	AV	2483.500	-47.83	≤-41.20	47.37	≤54	PASS
				AV	2499.920	-47.7	≤-41.20	47.50	≤54	PASS
				AV	2500.000	-47.71	≤-41.20	47.49	≤54	PASS
				Peak	2483.500	-43.4	≤-21.20	51.80	≤74	PASS
				Peak	2493.360	-38.35	≤-21.20	56.85	≤74	PASS
				Peak	2500.000	-43.47	≤-21.20	51.73	≤74	PASS
BLE_2M	Ant1	Low	2402	AV	2310.000	-48.65	≤-41.20	46.55	≤54	PASS
				AV	2389.460	-48.26	≤-41.20	46.94	≤54	PASS
				AV	2390.000	-48.28	≤-41.20	46.92	≤54	PASS
				Peak	2310.000	-39.6	≤-21.20	55.60	≤74	PASS
				Peak	2310.290	-39.12	≤-21.20	56.08	≤74	PASS
				Peak	2390.000	-41.62	≤-21.20	53.58	≤74	PASS
		High	2480	AV	2483.500	-47.42	≤-41.20	47.78	≤54	PASS
				AV	2483.520	-47.42	≤-41.20	47.78	≤54	PASS
				AV	2500.000	-47.73	≤-41.20	47.47	≤54	PASS
				Peak	2483.500	-43.06	≤-21.20	52.14	≤74	PASS
				Peak	2483.840	-38.78	≤-21.20	56.42	≤74	PASS
				Peak	2500.000	-41.95	≤-21.20	53.25	≤74	PASS

Note:

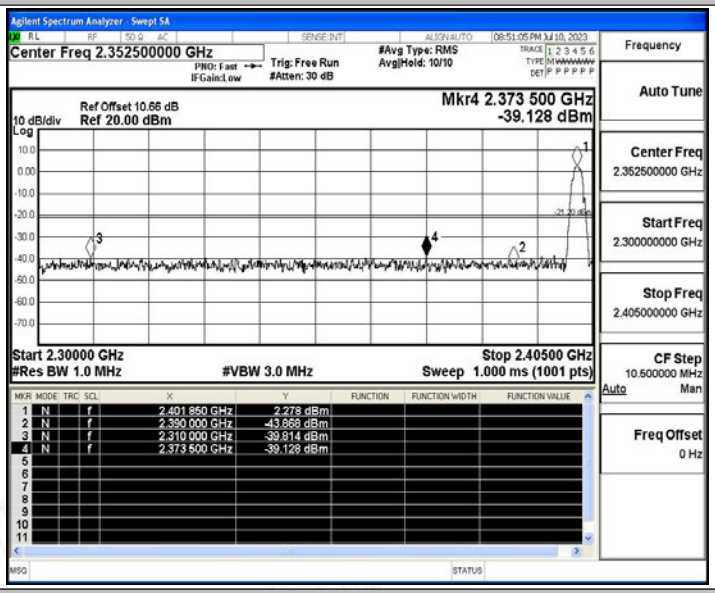
1. The Antenna Gain is compensated in the graph.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

Test Graphs

BLE_1M_Ant1_Low_2402_AV

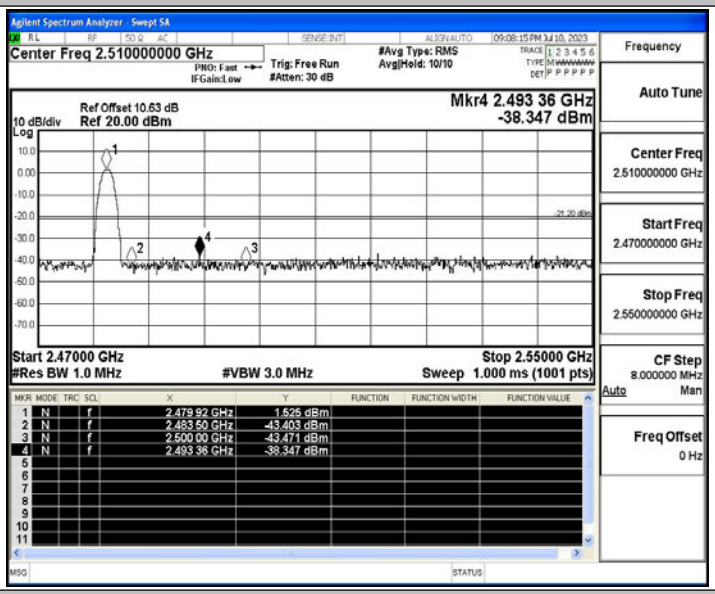


BLE_1M_Ant1_Low_2402_Peak

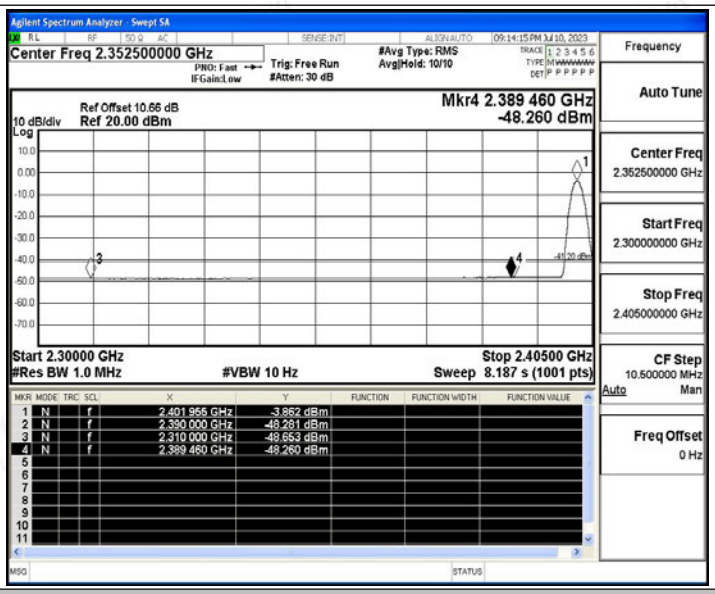


BLE_1M_Ant1_High_2480_AV

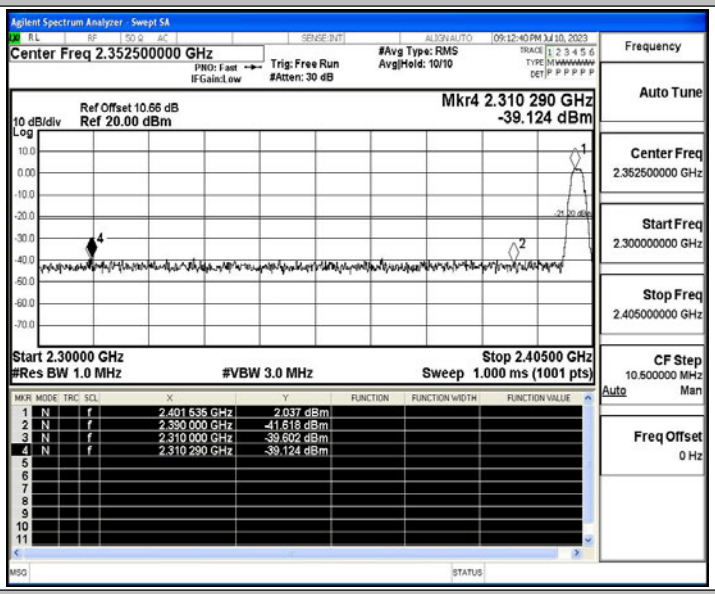
BLE_1M_Ant1_High_2480_Peak

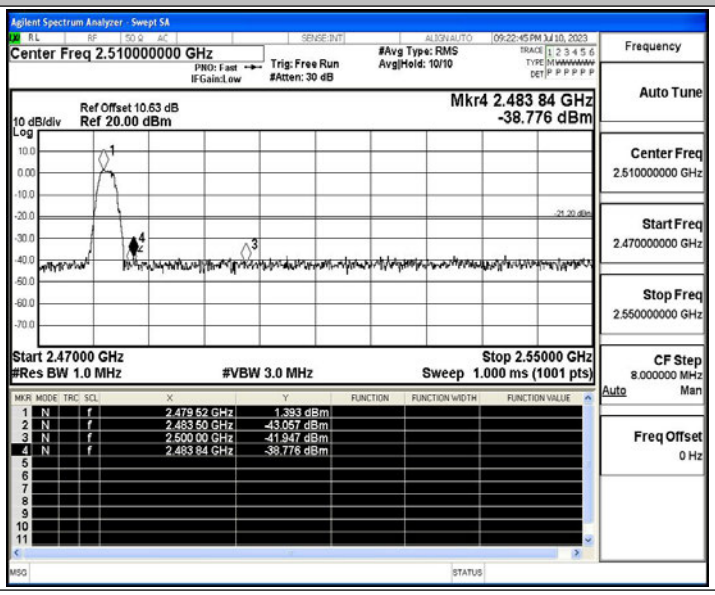


BLE_2M_Ant1_Low_2402_AV



BLE_2M_Ant1_Low_2402_Peak



BLE_2M_Ant1_High_2480_AV

BLE_2M_Ant1_High_2480_Peak