

Appendix B

RF Test Data for BT LE (Conducted Measurement)

Product Name: Hearing aid

Test Model: JH-A36D

Environmental Conditions

Temperature:	24.2°C
Relative Humidity:	53.2%
ATM Pressure:	100.0 kPa
Test Engineer:	Zhang hai
Supervised by:	Fengliu Tang

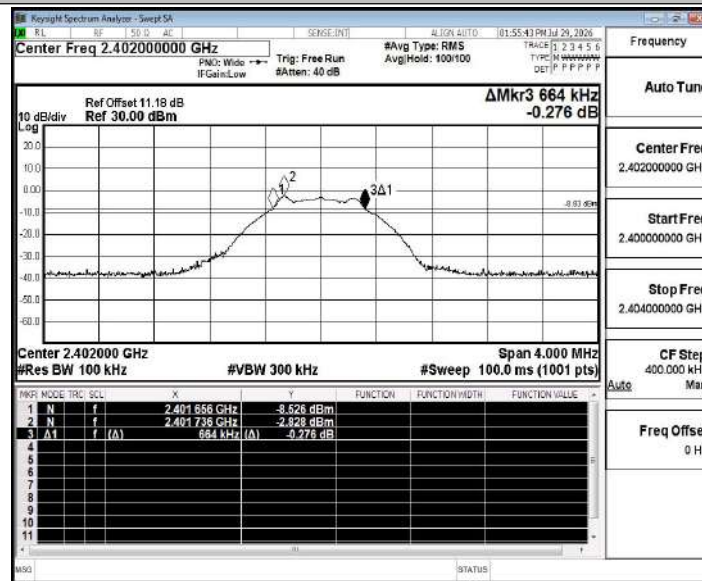
B.1 DTS Bandwidth

Test Result

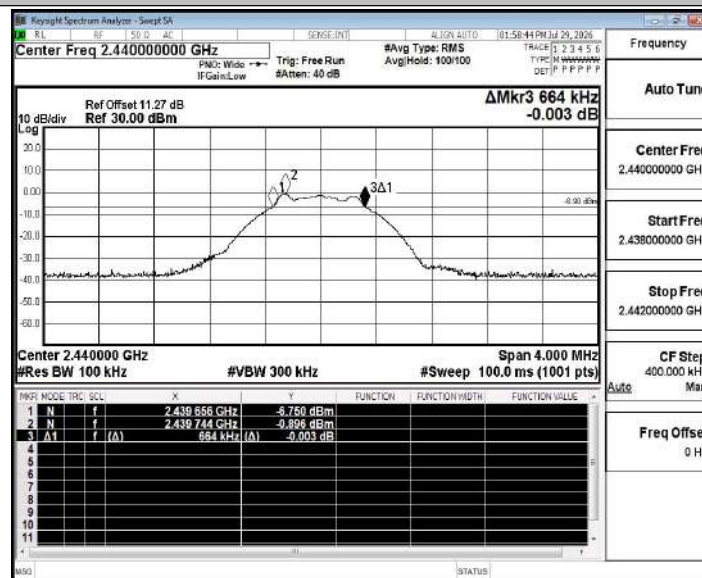
TestMode	Antenna	Freq(MHz)	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.664	2401.656	2402.320	0.5	PASS
		2440	0.664	2439.656	2440.320	0.5	PASS
		2480	0.656	2479.660	2480.316	0.5	PASS
BLE_2M	Ant1	2402	1.160	2401.400	2402.560	0.5	PASS
		2440	1.152	2439.404	2440.556	0.5	PASS
		2480	1.152	2479.400	2480.552	0.5	PASS

Test Graphs

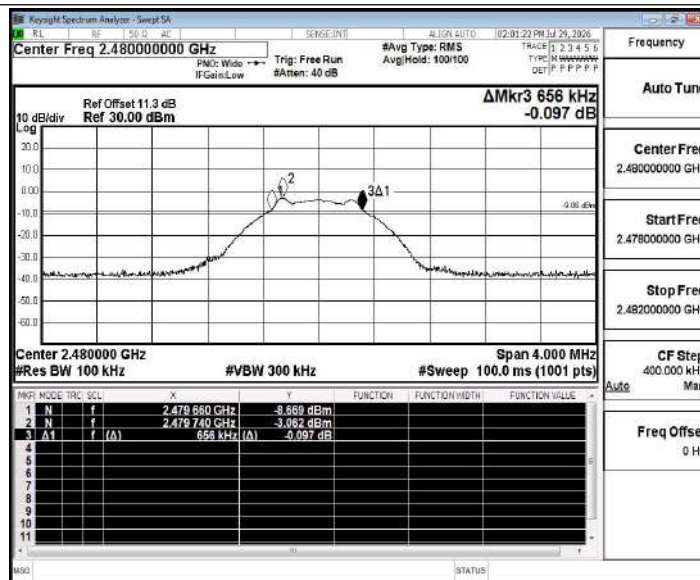
BLE_1M_Ant1_2402



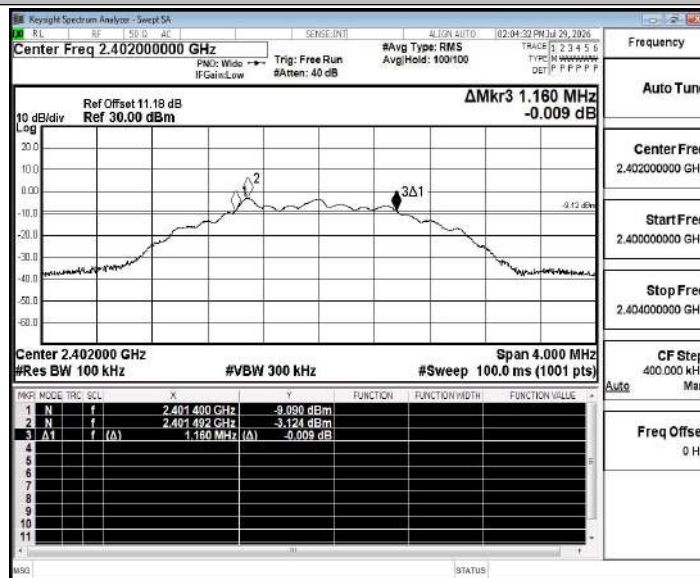
BLE_1M_Ant1_2440



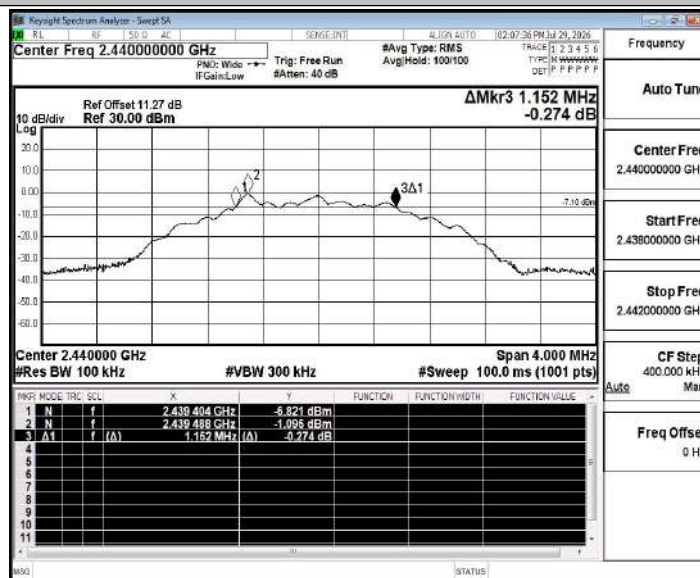
BLE_1M_Ant1_2480



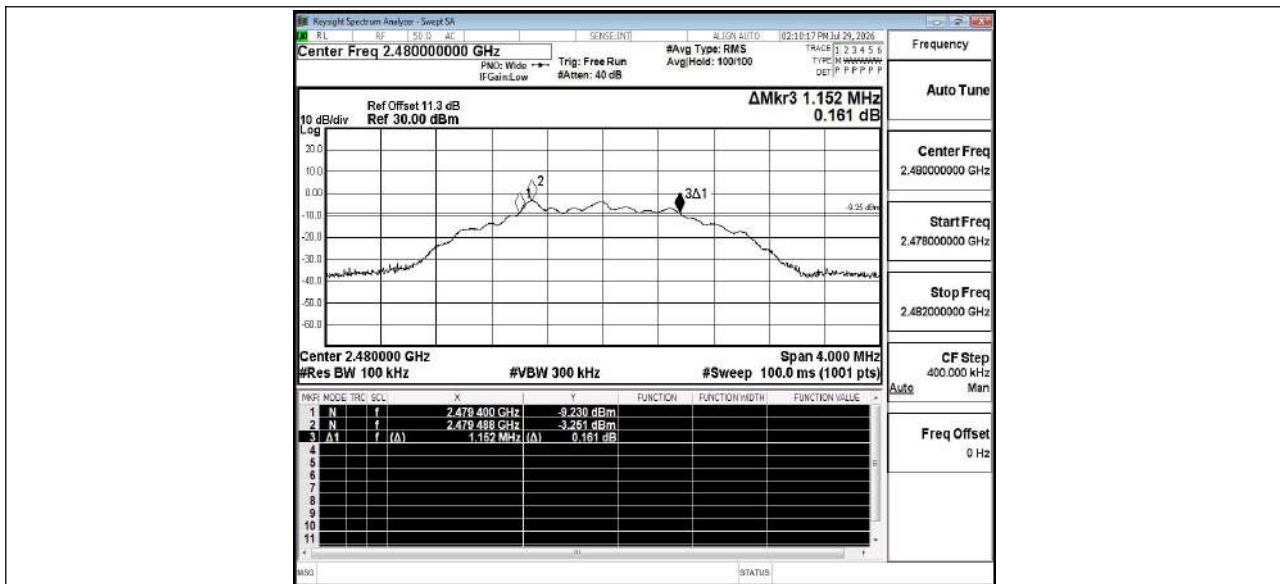
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480

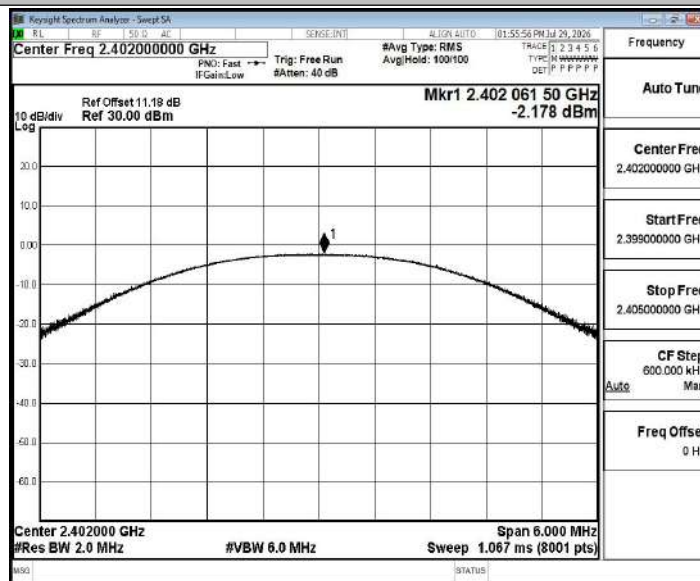


B.2 Maximum Peak conducted output power

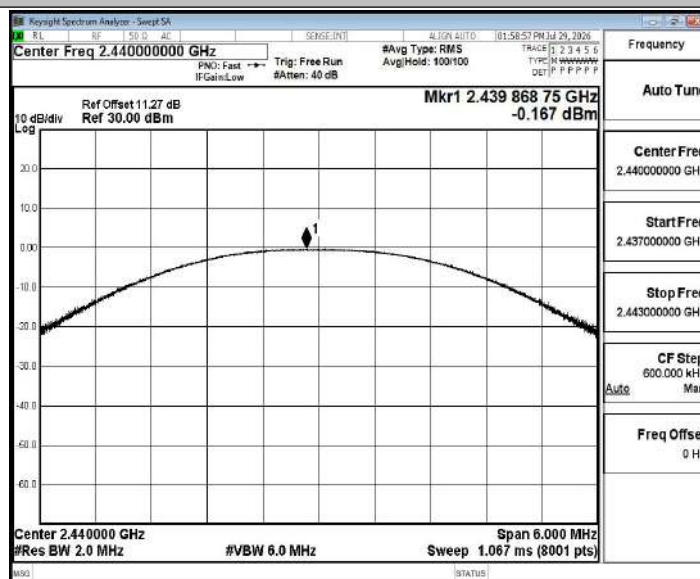
TestMode	Antenna	Freq(MHz)	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
BLE_1M	Ant1	2402	-2.18	≤30	PASS
		2440	-0.17	≤30	PASS
		2480	-2.3	≤30	PASS
BLE_2M	Ant1	2402	-2.23	≤30	PASS
		2440	-0.38	≤30	PASS
		2480	-2.39	≤30	PASS

Test Graphs Peak

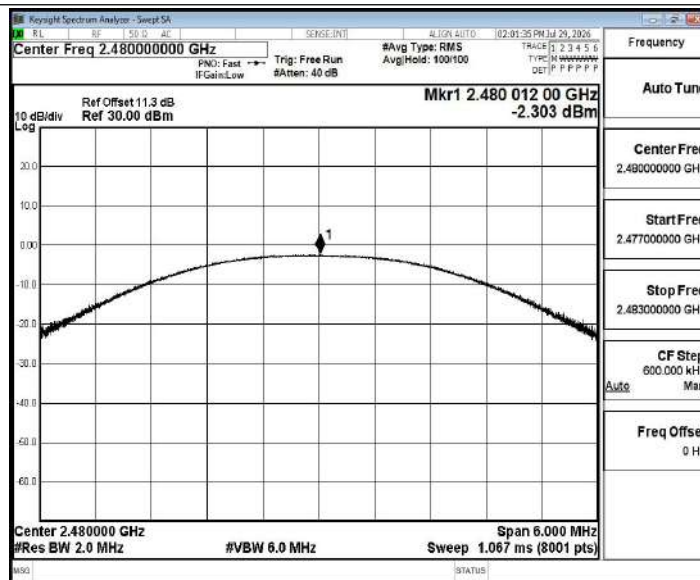
BLE_1M_Ant1_2402



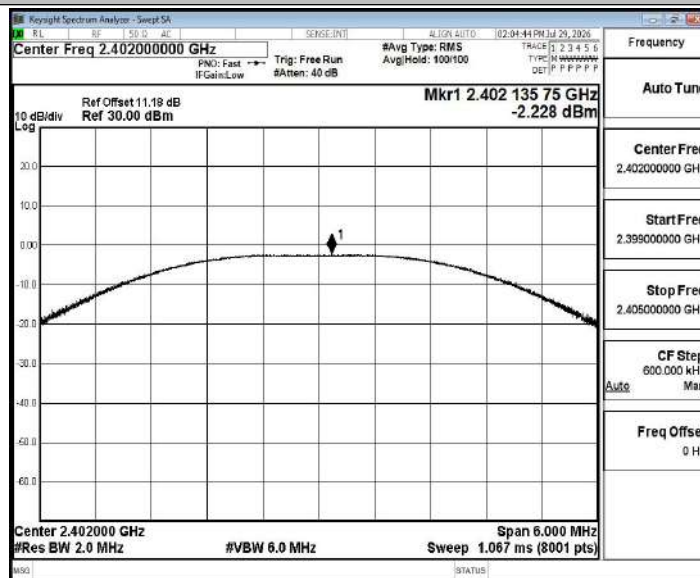
BLE_1M_Ant1_2440



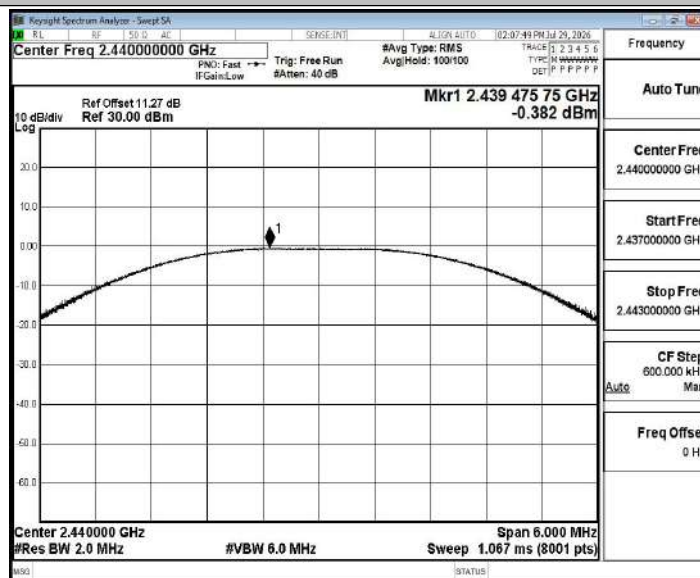
BLE_1M_Ant1_2480



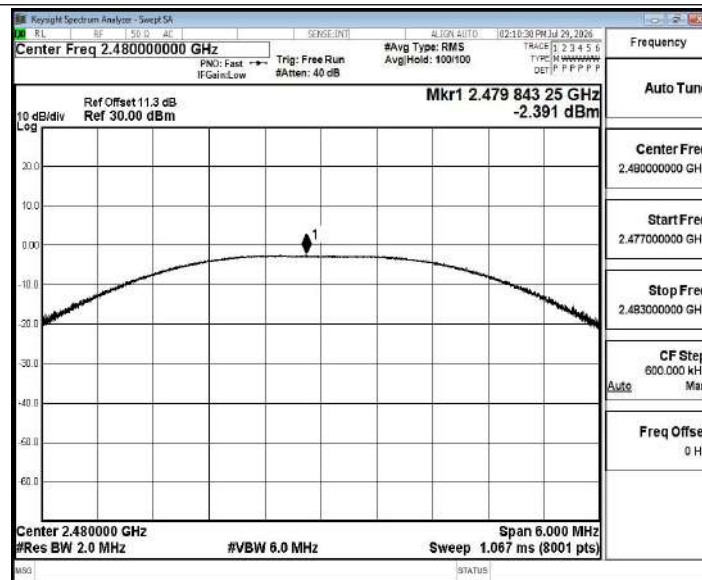
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480



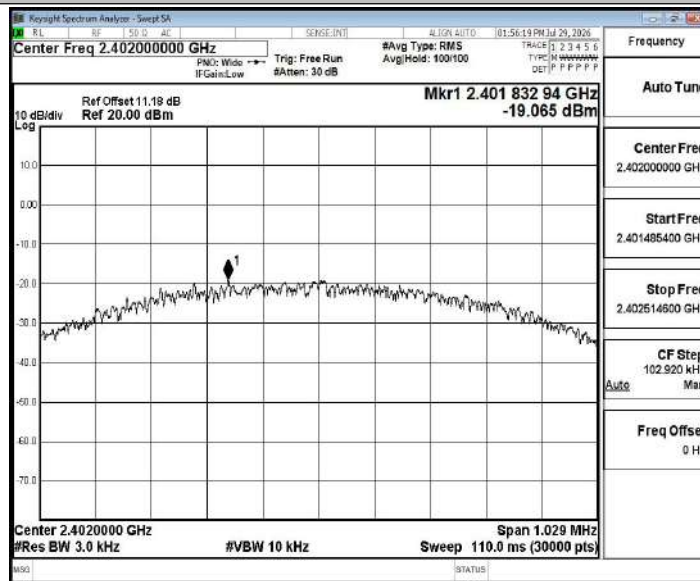
B.3 Maximum power spectral density

Test Result

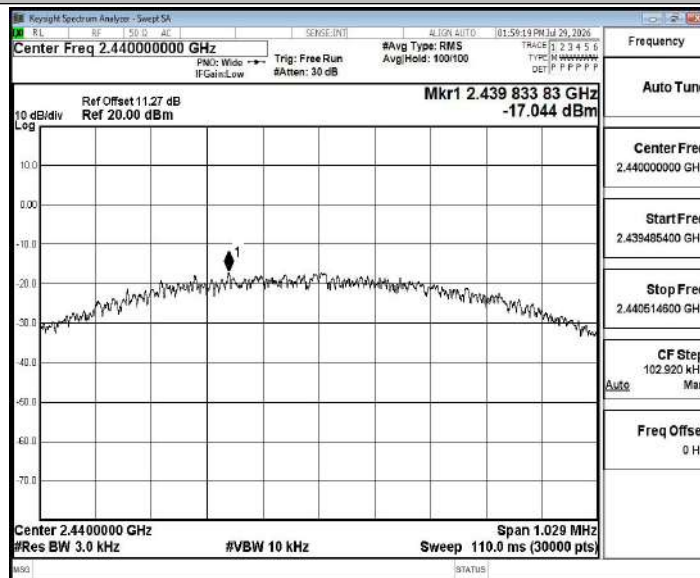
TestMode	Antenna	Freq(MHz)	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-19.07	≤8.00	PASS
		2440	-17.04	≤8.00	PASS
		2480	-19.26	≤8.00	PASS
BLE_2M	Ant1	2402	-22.23	≤8.00	PASS
		2440	-20.34	≤8.00	PASS
		2480	-22.48	≤8.00	PASS

Test Graphs

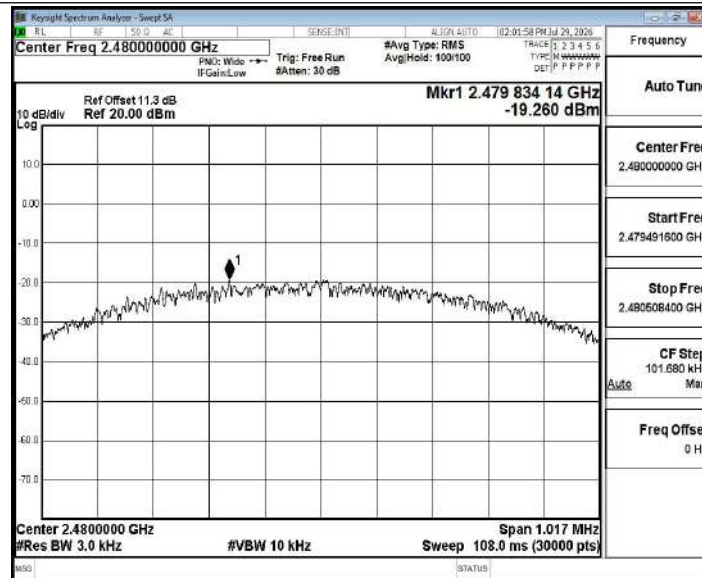
BLE_1M_Ant1_2402



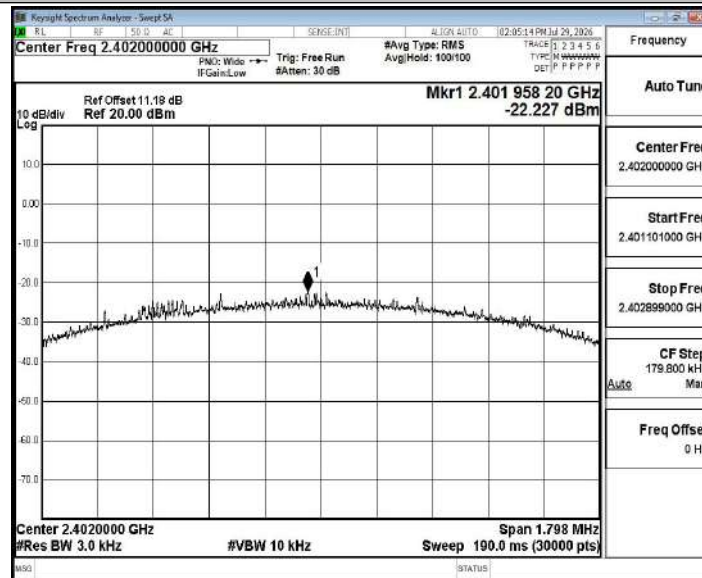
BLE_1M_Ant1_2440



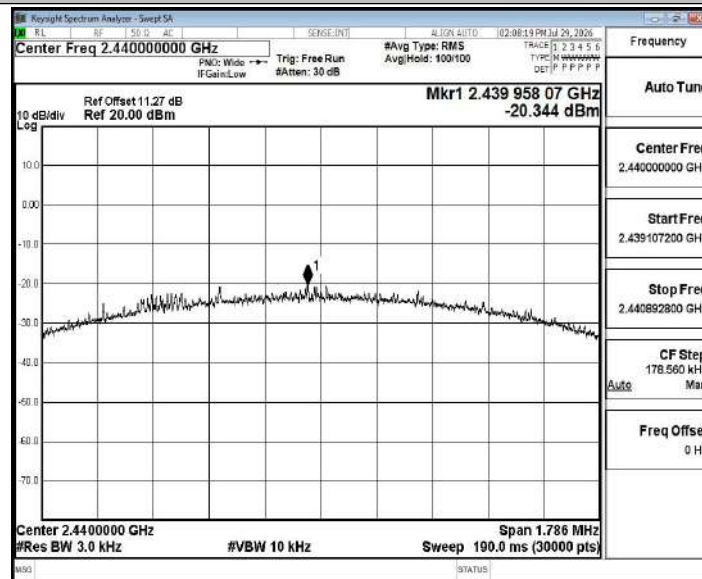
BLE_1M_Ant1_2480



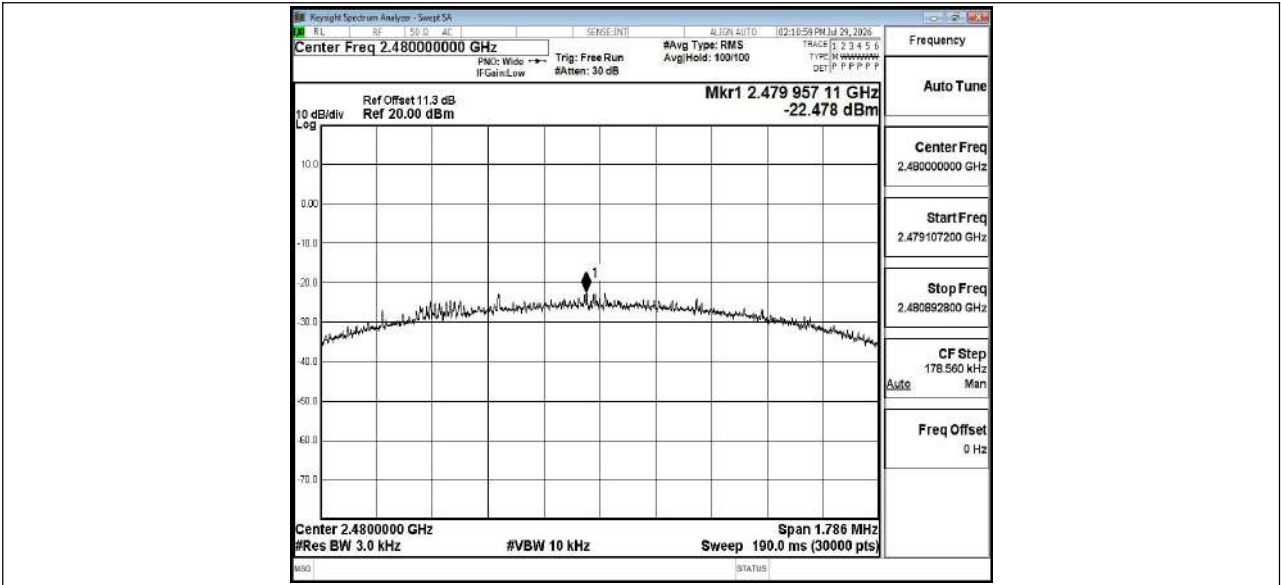
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480



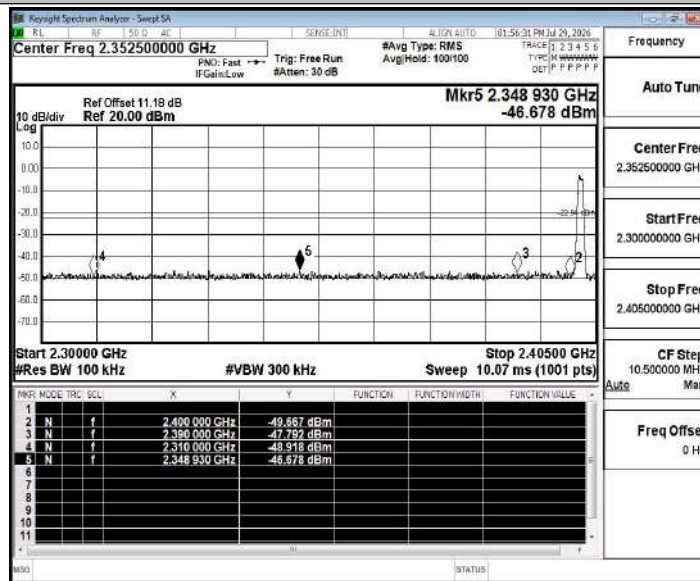
B.4 Band edge measurements

Test Result

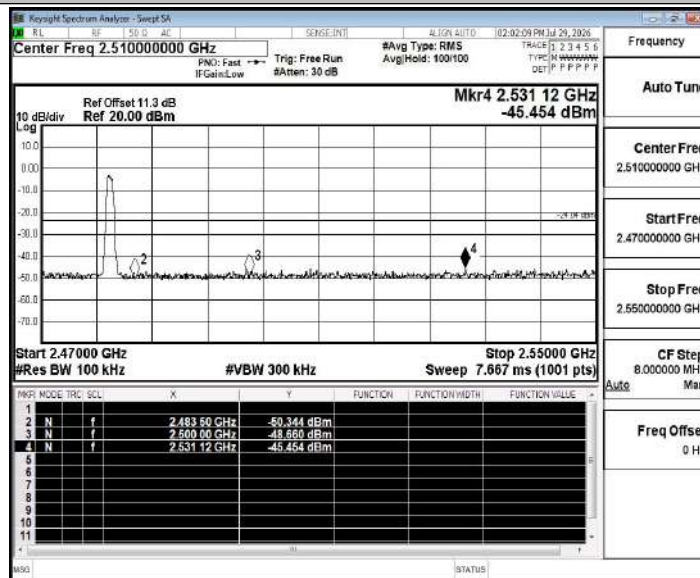
TestMode	Antenna	ChName	Freq(MHz)	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	-2.94	-46.68	≤-22.94	PASS
		High	2480	-4.04	-45.45	≤-24.04	PASS
BLE_2M	Ant1	Low	2402	-3.22	-46.14	≤-23.22	PASS
		High	2480	-3.36	-45.13	≤-23.36	PASS

Test Graphs

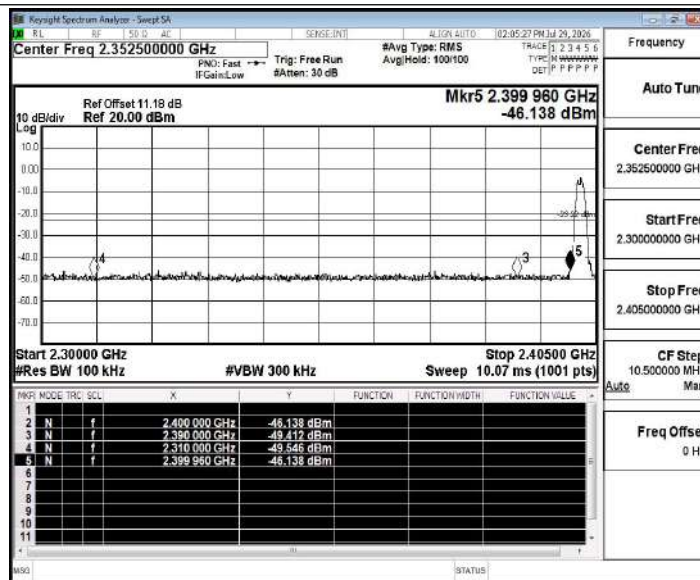
BLE_1M_Ant1_Low_2402



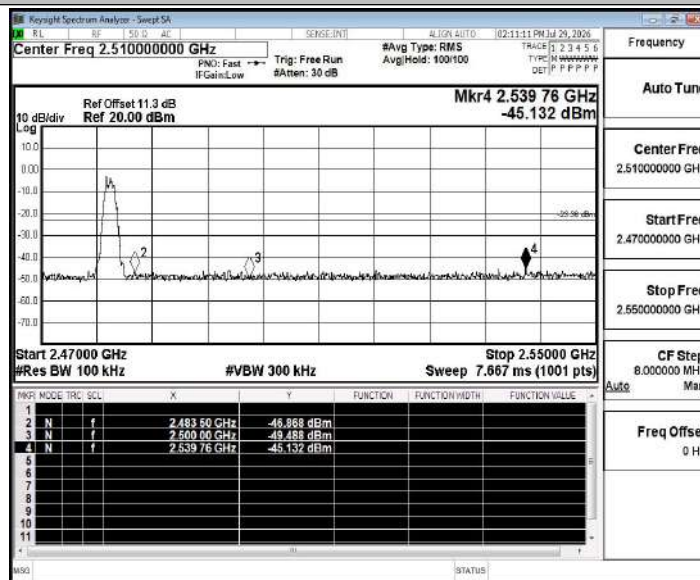
BLE_1M_Ant1_High_2480



BLE_2M_Ant1_Low_2402



BLE_2M_Ant1_High_2480



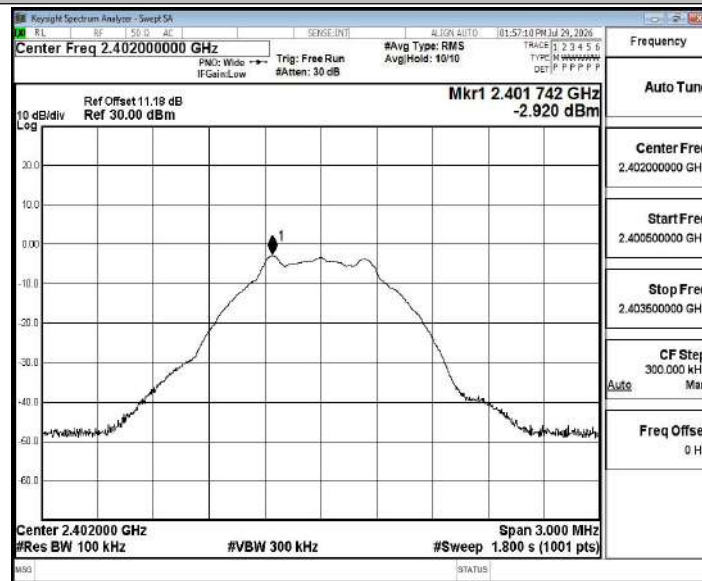
B.5 Conducted Spurious Emission

Test Result

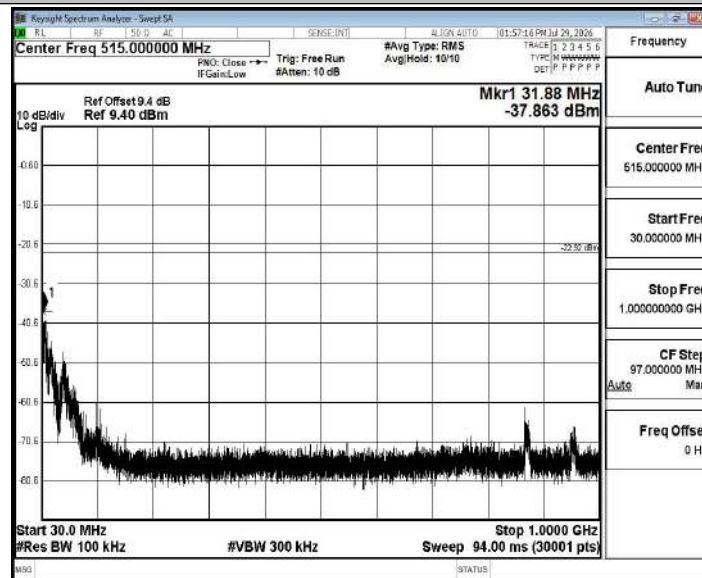
TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	-2.92	-2.92	---	PASS
			30~1000	-2.92	-37.86	≤-22.92	PASS
			1000~26500	-2.92	-44.03	≤-22.92	PASS
		2440	Reference	-0.99	-0.99	---	PASS
			30~1000	-0.99	-37.41	≤-20.99	PASS
			1000~26500	-0.99	-44.6	≤-20.99	PASS
		2480	Reference	-3.11	-3.11	---	PASS
			30~1000	-3.11	-39.27	≤-23.11	PASS
			1000~26500	-3.11	-44.51	≤-23.11	PASS
BLE_2M	Ant1	2402	Reference	-3.17	-3.17	---	PASS
			30~1000	-3.17	-38.25	≤-23.17	PASS
			1000~26500	-3.17	-44.41	≤-23.17	PASS
		2440	Reference	-1.27	-1.27	---	PASS
			30~1000	-1.27	-38.17	≤-21.27	PASS
			1000~26500	-1.27	-44.24	≤-21.27	PASS
		2480	Reference	-3.35	-3.35	---	PASS
			30~1000	-3.35	-37.74	≤-23.35	PASS
			1000~26500	-3.35	-44.6	≤-23.35	PASS

Test Graphs

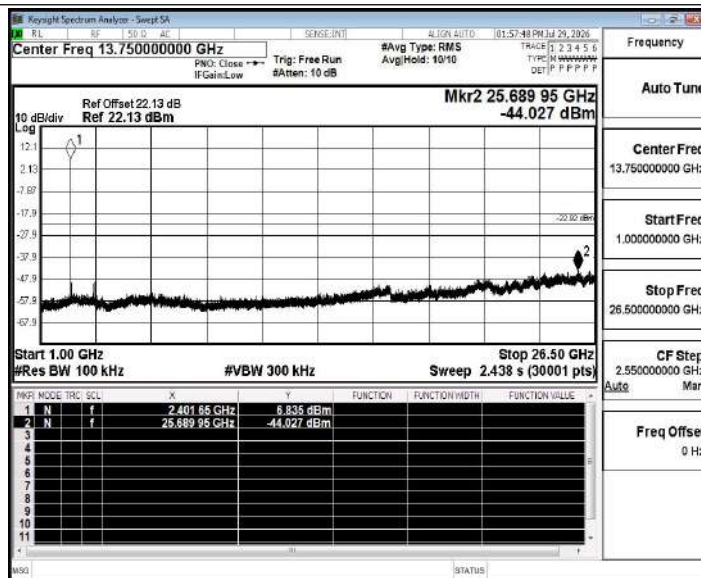
BLE_1M_Ant1_2402_0~Reference



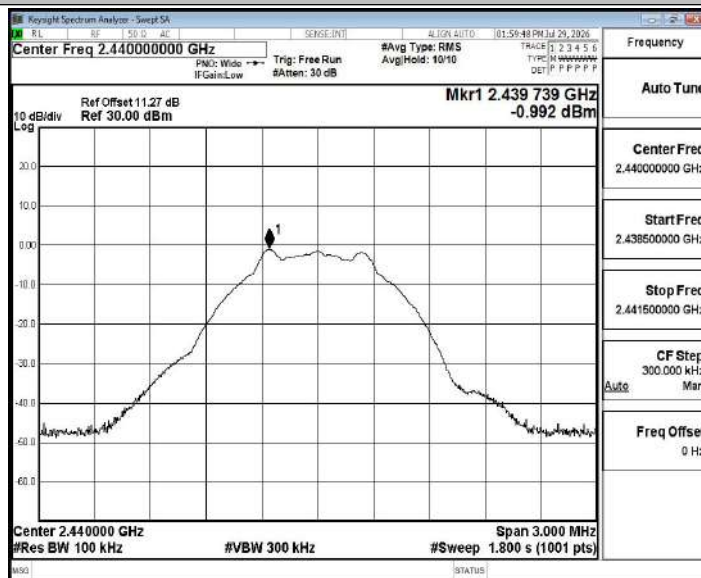
BLE_1M_Ant1_2402_30~1000



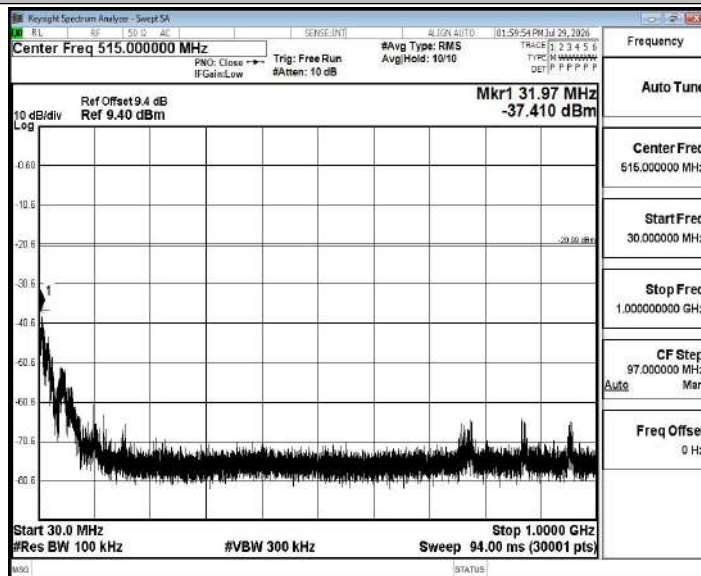
BLE_1M_Ant1_2402_1000~26500



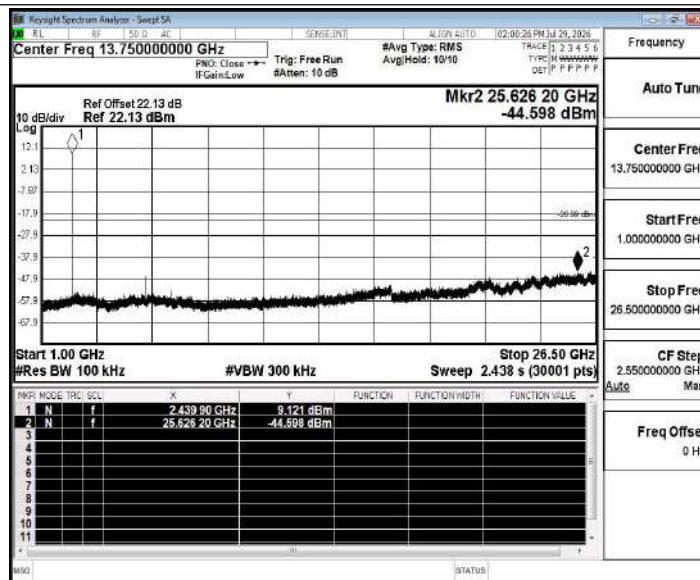
BLE_1M_Ant1_2440_0~Reference



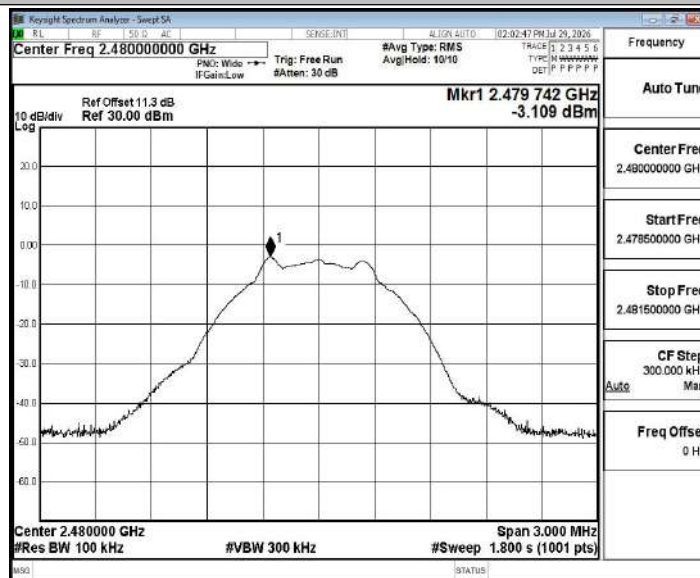
BLE_1M_Ant1_2440_30~1000



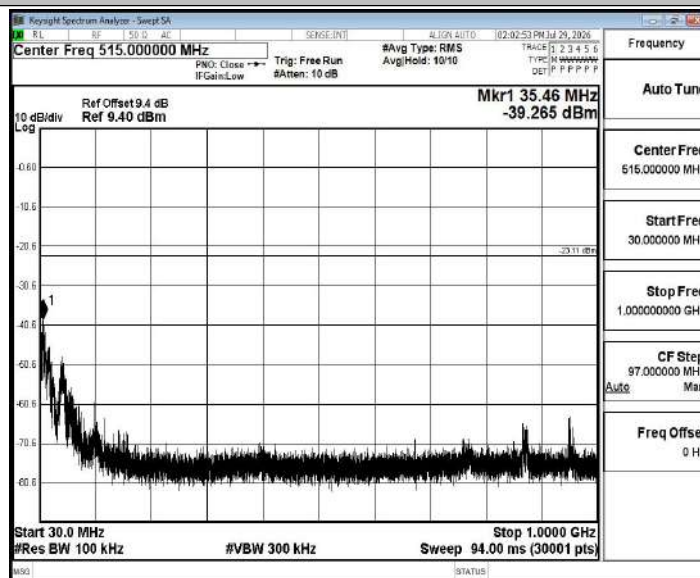
BLE_1M_Ant1_2440_1000~26500



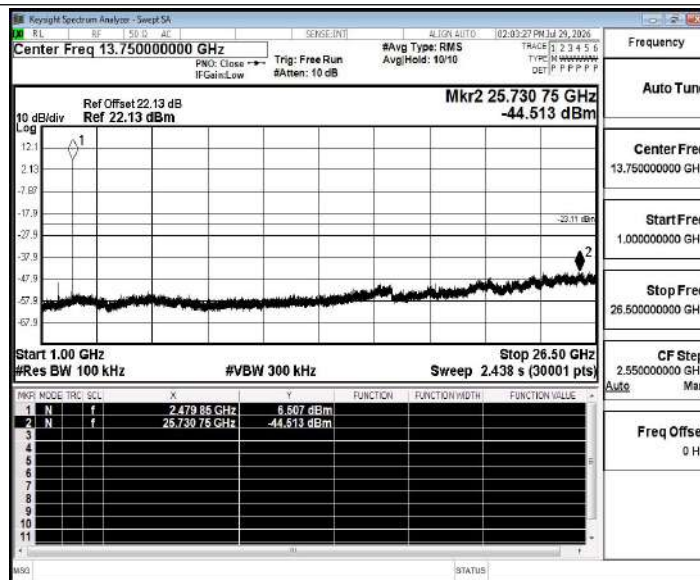
BLE_1M_Ant1_2480_0~Reference



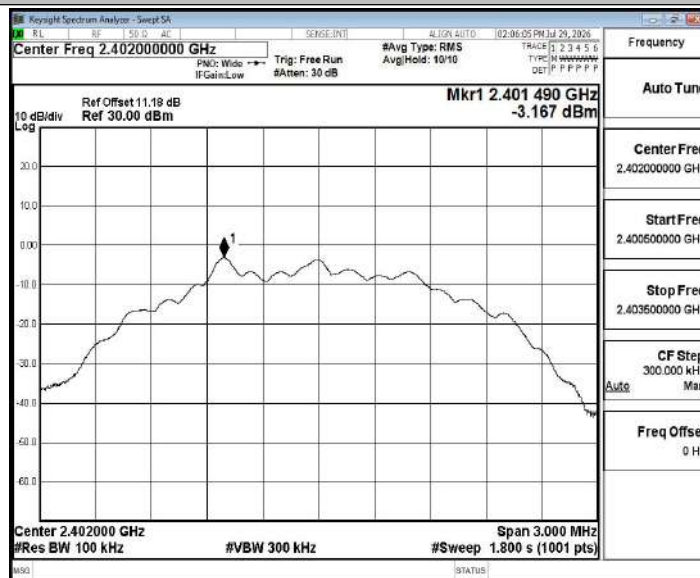
BLE_1M_Ant1_2480_30~1000



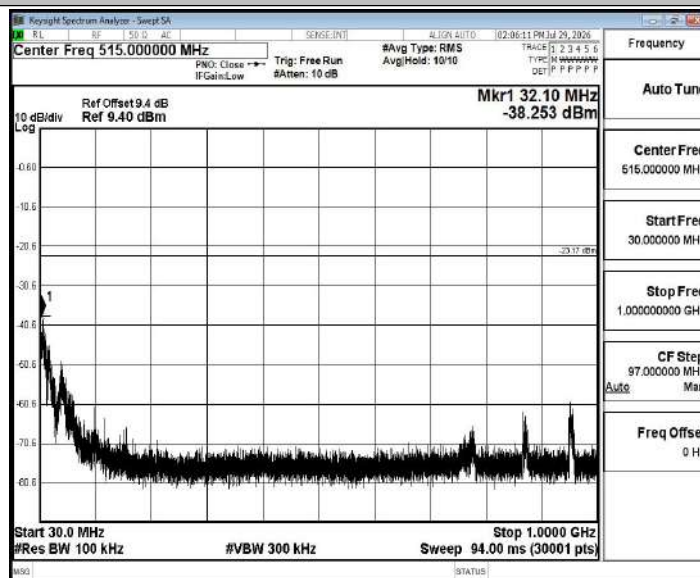
BLE_1M_Ant1_2480_1000~26500



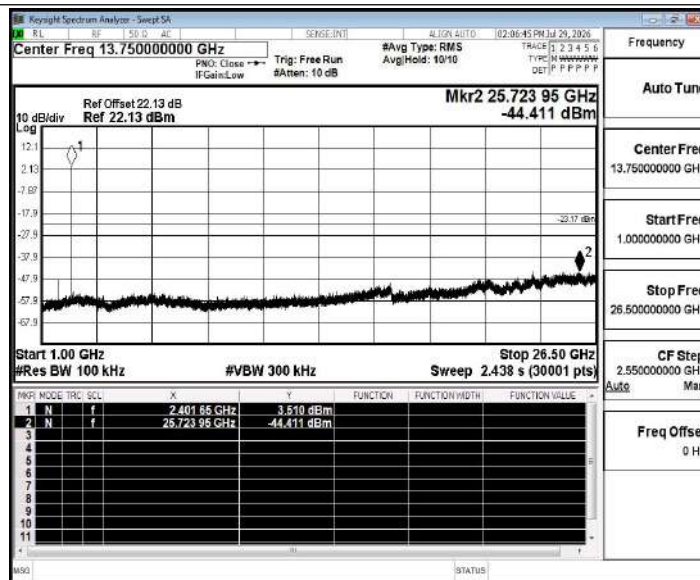
BLE_2M_Ant1_2402_0~Reference



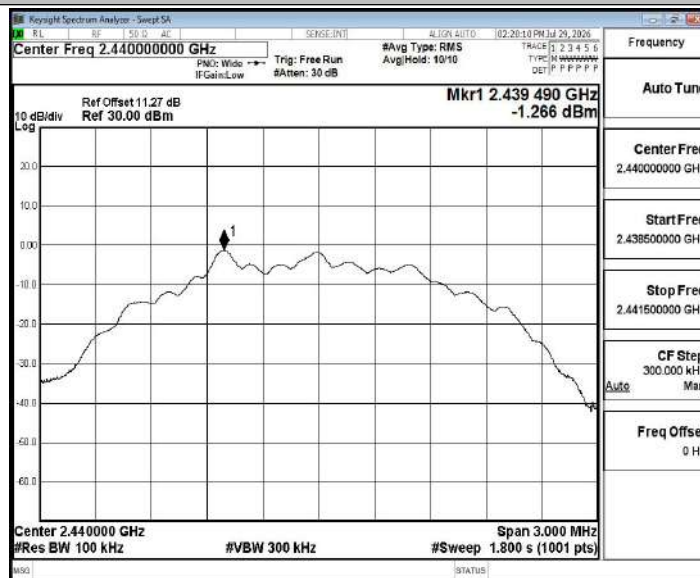
BLE_2M_Ant1_2402_30~1000



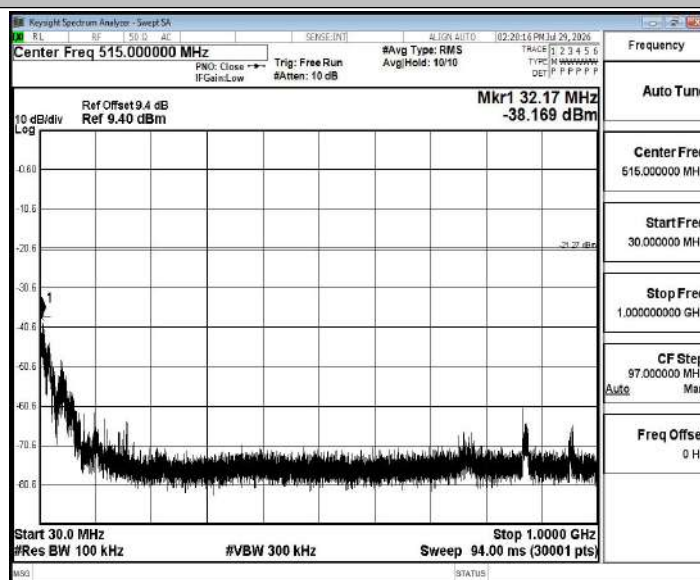
BLE_2M_Ant1_2402_1000~26500



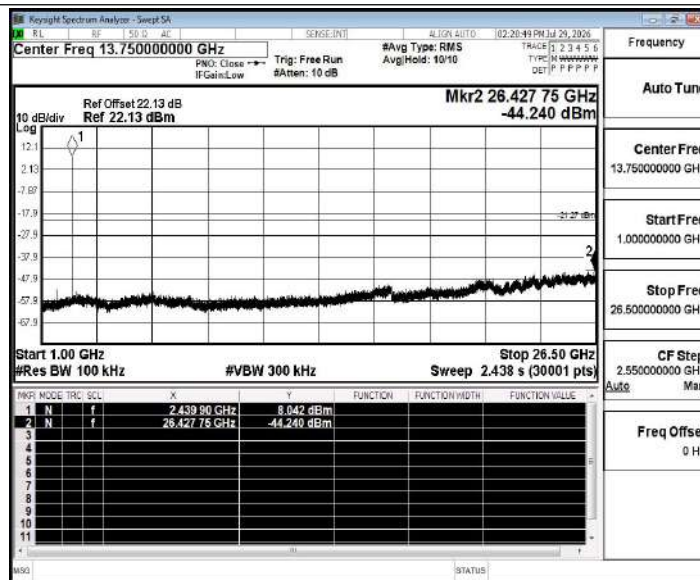
BLE_2M_Ant1_2440_0~Reference



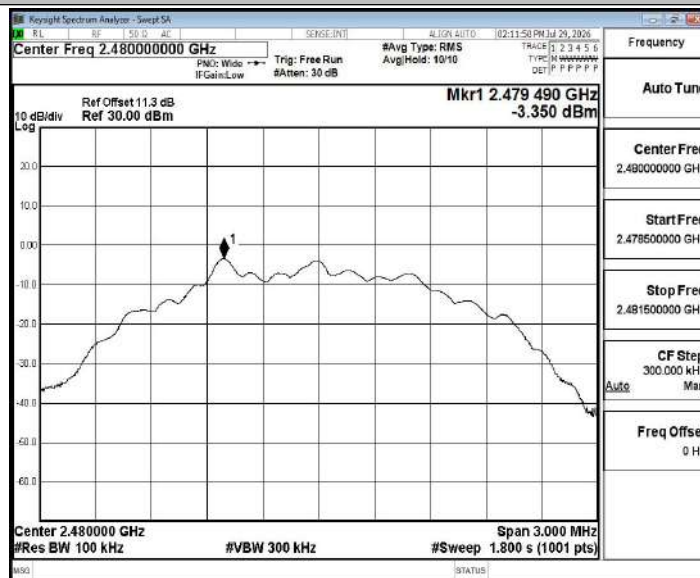
BLE_2M_Ant1_2440_30~1000



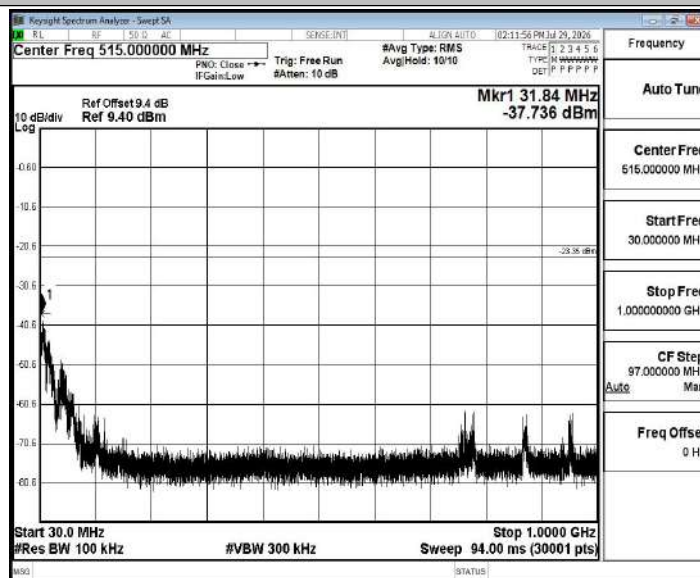
BLE_2M_Ant1_2440_1000~26500



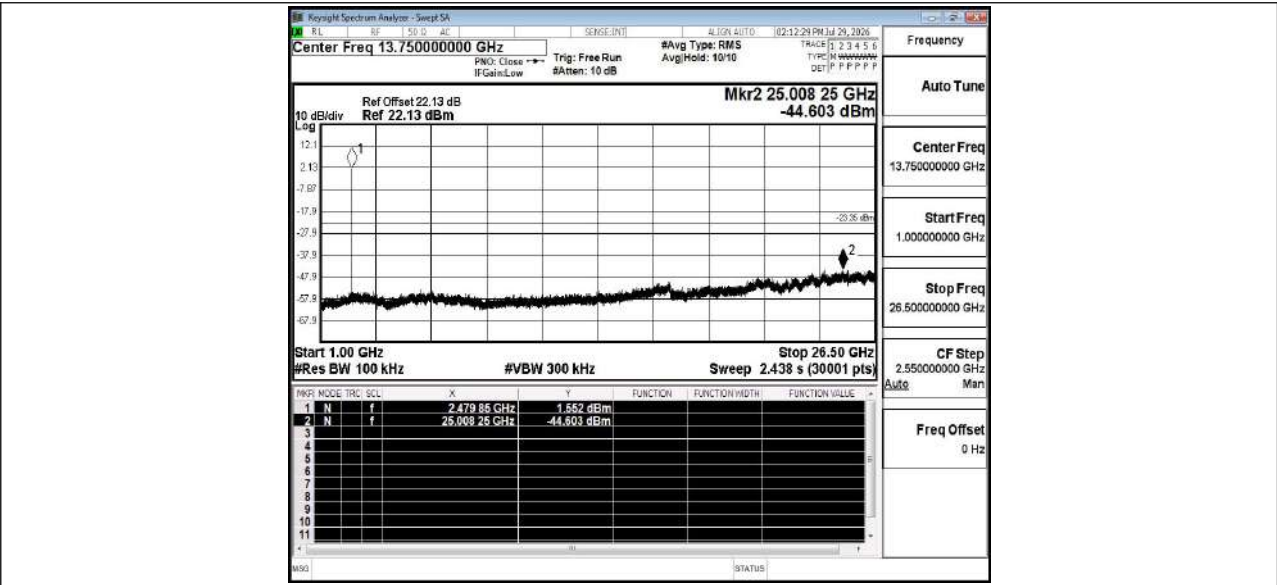
BLE_2M_Ant1_2480_0~Reference



BLE_2M_Ant1_2480_30~1000



BLE_2M_Ant1_2480_1000~26500



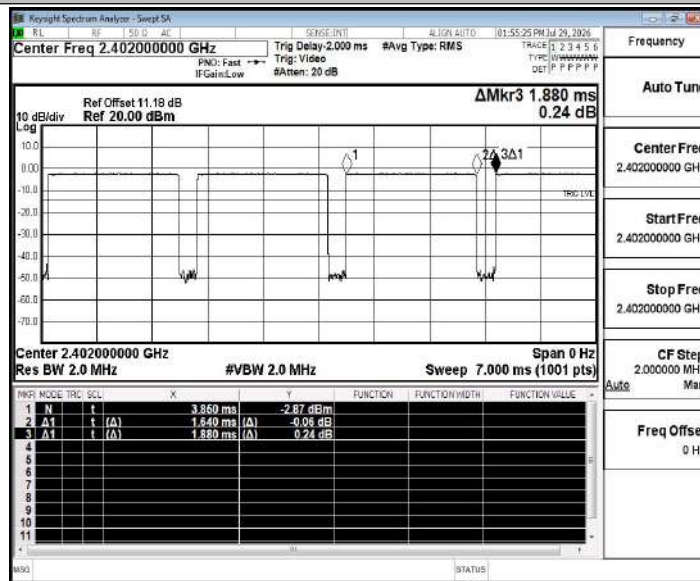
B.6 Duty Cycle

Test Result

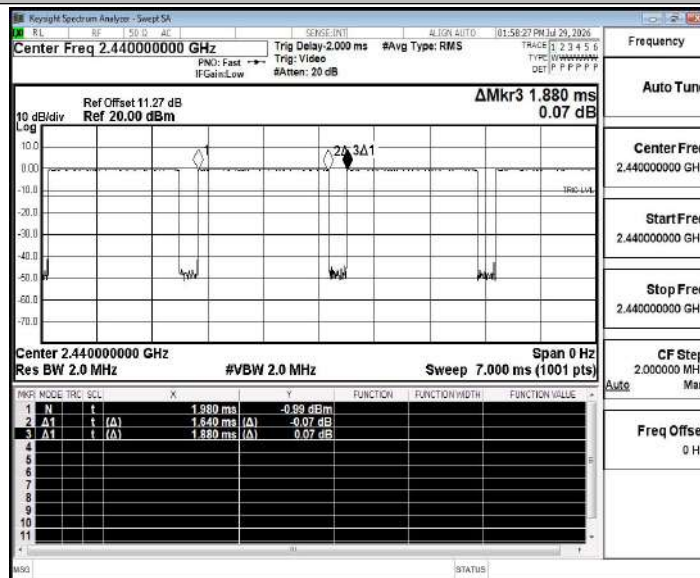
TestMode	Antenna	Freq(MHz)	ON Time [ms]	Period [ms]	X	DC [%]	xFactor	Limit	Verdict
BLE_1M	Ant1	2402	1.64	1.88	0.8723	87.23	0.59	---	---
		2440	1.64	1.88	0.8723	87.23	0.59	---	---
		2480	1.64	1.88	0.8723	87.23	0.59	---	---
BLE_2M	Ant1	2402	0.82	1.25	0.6560	65.60	1.83	---	---
		2440	0.82	1.25	0.6560	65.60	1.83	---	---
		2480	0.81	1.24	0.6532	65.32	1.85	---	---

Test Graphs

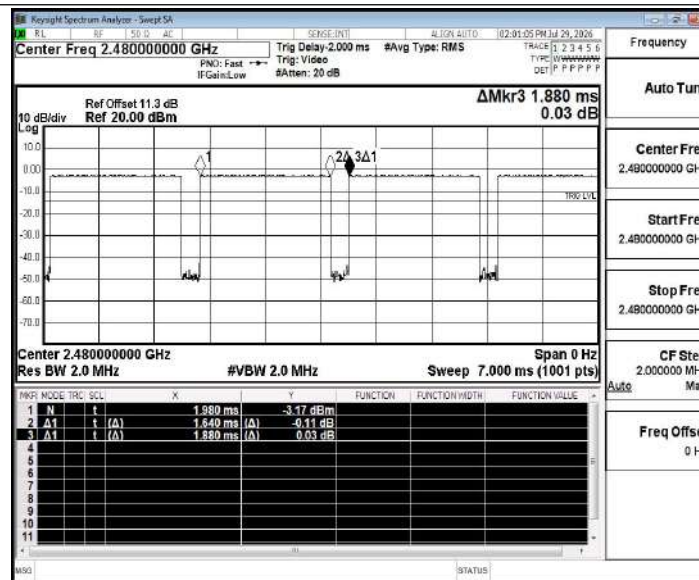
BLE_1M_Ant1_2402



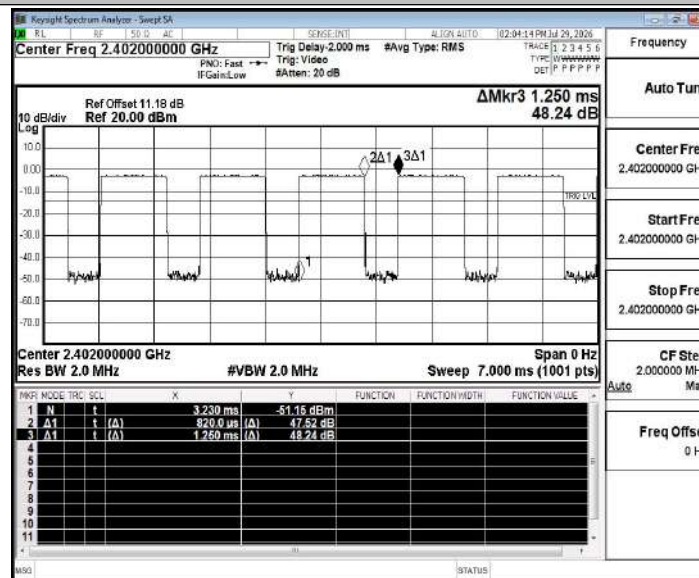
BLE_1M_Ant1_2440



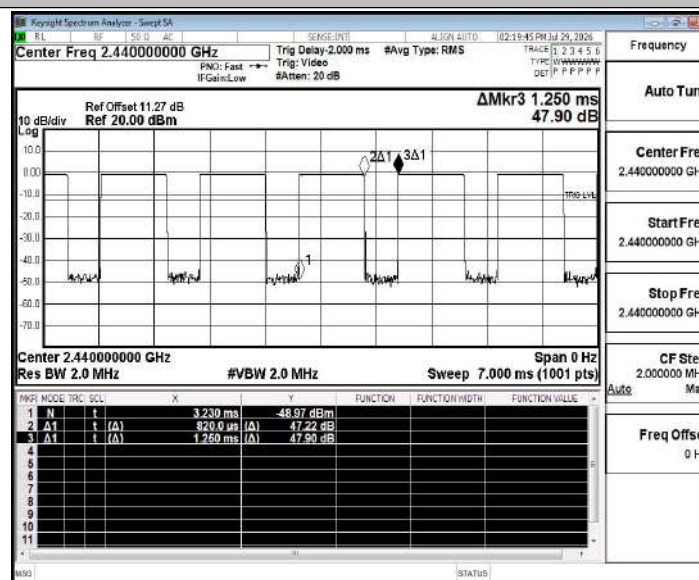
BLE_1M_Ant1_2480



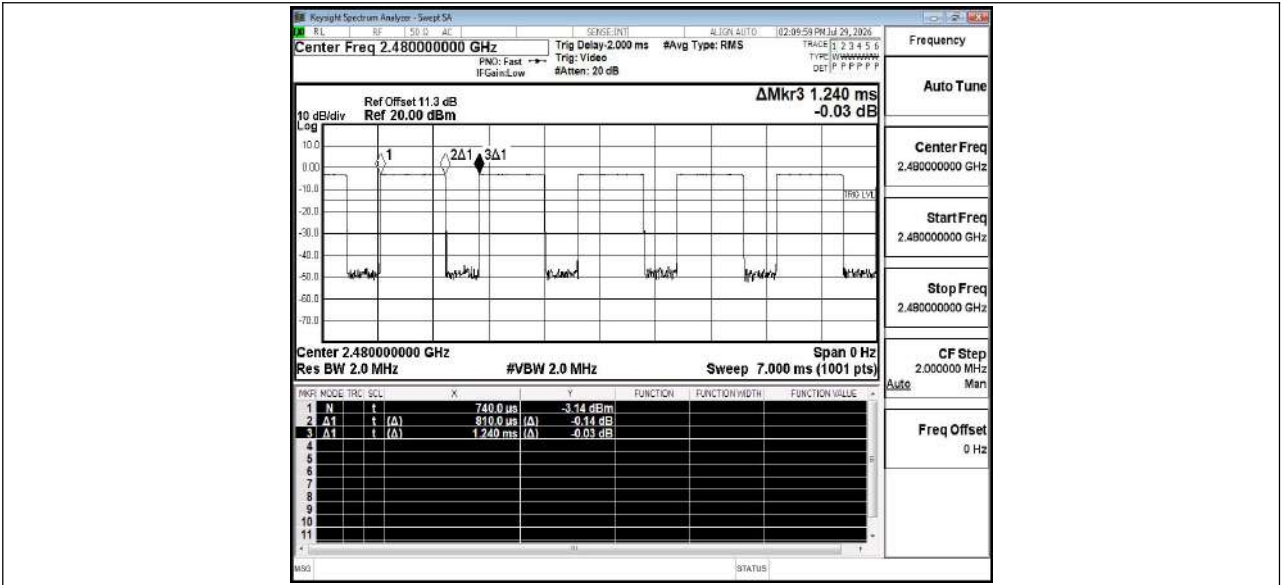
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480



B.7 Emissions in Restricted Bands

Test Result

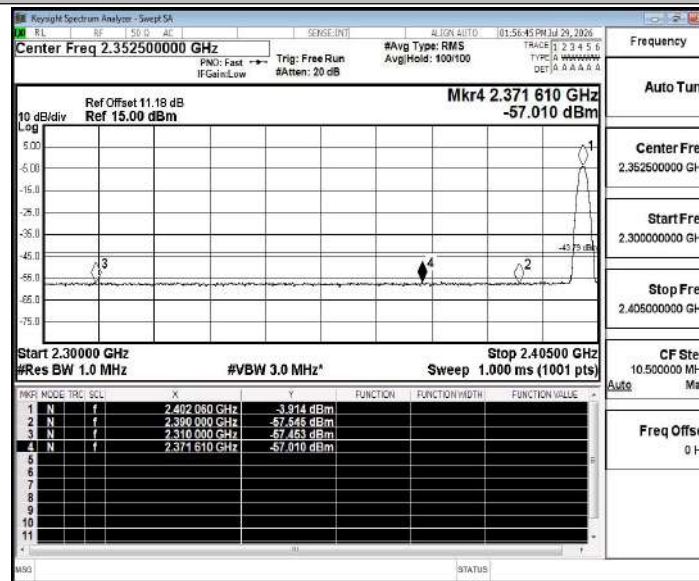
TestM ode	Anten na	ChNa me	Freq(MHz)	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Gain [dBi]	DC Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
BLE_ 1M	Ant1	Low	2402	AV	2310.000	-57.45	≤-43.79	2.00	0.59	40.34	≤54	PASS
				AV	2371.610	-57.01	≤-43.79	2.00	0.59	40.78	≤54	PASS
				AV	2390.000	-57.55	≤-43.79	2.00	0.59	40.24	≤54	PASS
				Peak	2310.000	-49.31	≤-23.20	2.00	0.00	47.89	≤74	PASS
				Peak	2384.735	-46.73	≤-23.20	2.00	0.00	50.47	≤74	PASS
				Peak	2390.000	-48.98	≤-23.20	2.00	0.00	48.22	≤74	PASS
		High	2480	AV	2483.500	-57.39	≤-43.79	2.00	0.59	40.40	≤54	PASS
				AV	2489.040	-56.46	≤-43.79	2.00	0.59	41.33	≤54	PASS
				AV	2500.000	-57.74	≤-43.79	2.00	0.59	40.05	≤54	PASS
				Peak	2483.500	-49.09	≤-23.20	2.00	0.00	48.11	≤74	PASS
				Peak	2499.280	-45.91	≤-23.20	2.00	0.00	51.29	≤74	PASS
				Peak	2500.000	-49.32	≤-23.20	2.00	0.00	47.88	≤74	PASS
BLE_ 2M	Ant1	Low	2402	AV	2310.000	-57.83	≤-45.03	2.00	1.83	41.20	≤54	PASS
				AV	2325.515	-56.96	≤-45.03	2.00	1.83	42.07	≤54	PASS
				AV	2390.000	-57.83	≤-45.03	2.00	1.83	41.20	≤54	PASS
				Peak	2310.000	-48.84	≤-23.20	2.00	0.00	48.36	≤74	PASS
				Peak	2382.635	-46.53	≤-23.20	2.00	0.00	50.67	≤74	PASS
				Peak	2390.000	-49.21	≤-23.20	2.00	0.00	47.99	≤74	PASS
		High	2480	AV	2483.500	-57.16	≤-45.05	2.00	1.85	41.89	≤54	PASS
				AV	2489.600	-56.58	≤-45.05	2.00	1.85	42.47	≤54	PASS
				AV	2500.000	-57.33	≤-45.05	2.00	1.85	41.72	≤54	PASS
				Peak	2483.500	-48.3	≤-23.20	2.00	0.00	48.90	≤74	PASS
				Peak	2494.080	-46.5	≤-23.20	2.00	0.00	50.70	≤74	PASS
				Peak	2500.000	-47.88	≤-23.20	2.00	0.00	49.32	≤74	PASS

Note:

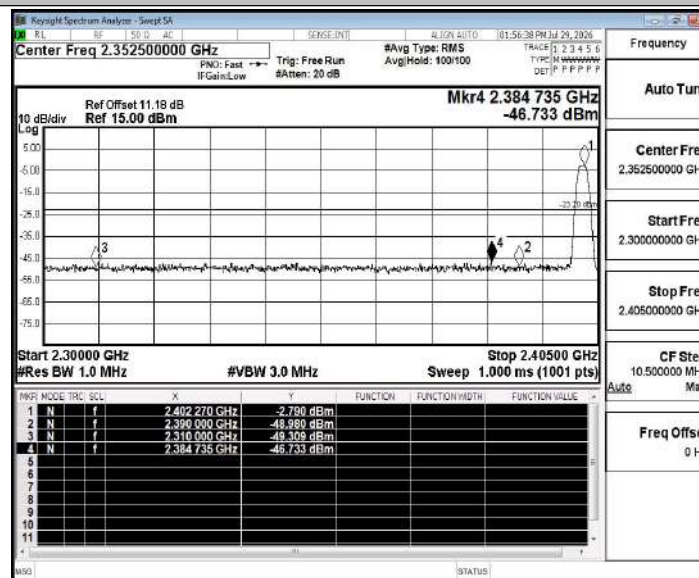
1. The Antenna Gain is compensated in the graph.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

Test Graphs

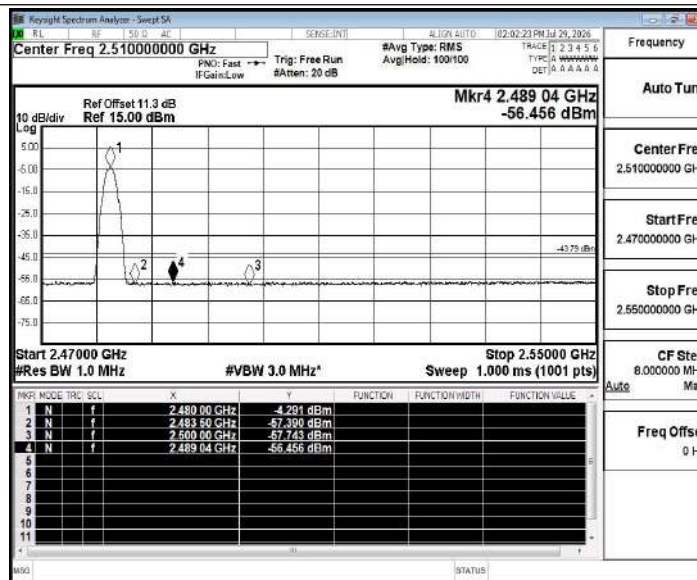
BLE_1M_Ant1_Low_2402_AV



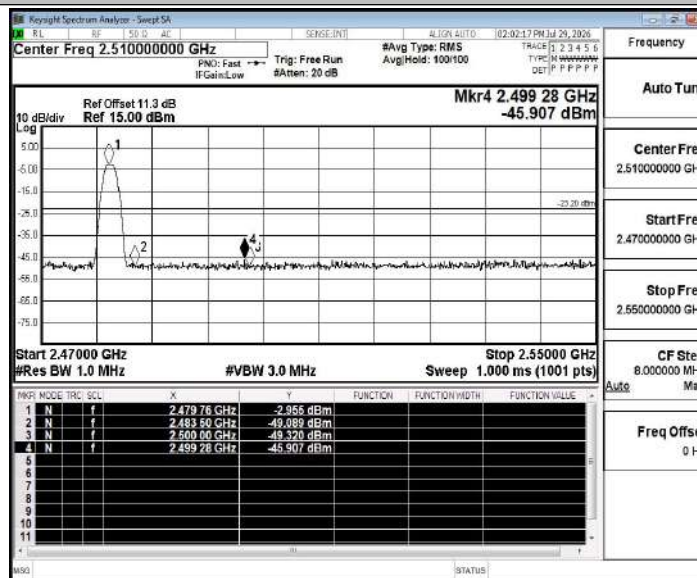
BLE_1M_Ant1_Low_2402_Peak



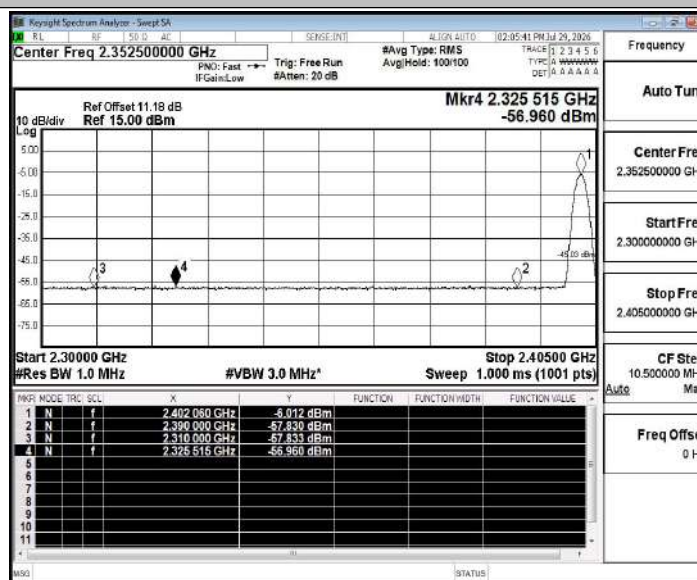
BLE_1M_Ant1_High_2480_AV



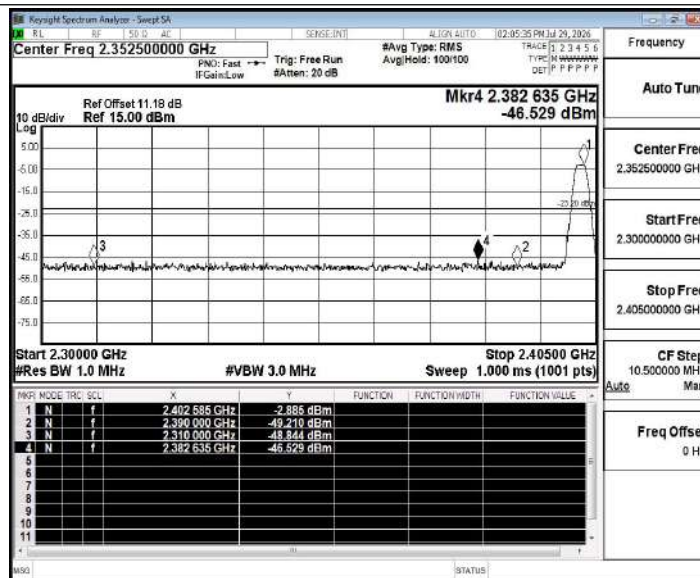
BLE_1M_Ant1_High_2480_Peak



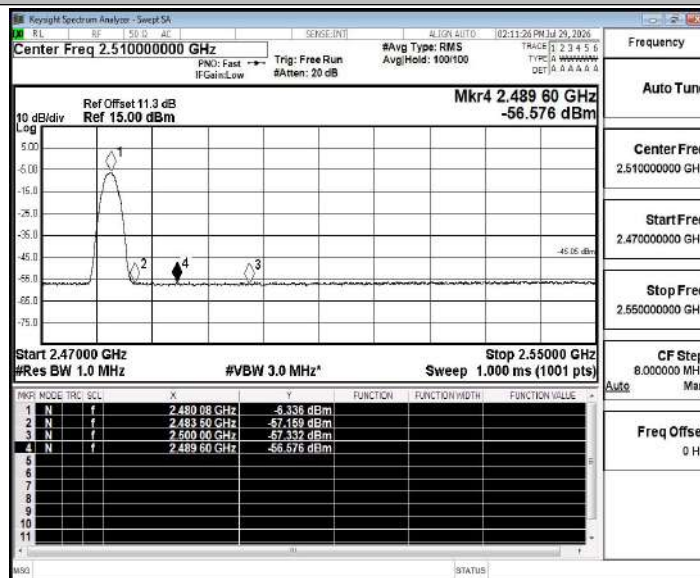
BLE_2M_Ant1_Low_2402_AV



BLE_2M_Ant1_Low_2402_Peak



BLE_2M_Ant1_High_2480_AV



BLE_2M_Ant1_High_2480_Peak

