



Appendix B

RF Test Data for BT LE (Conducted Measurement)

Product Name: Electric Wind Instrument

Test Model: EWIL1

Environmental Conditions

Temperature:	23.8° C
Relative Humidity:	52.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Jay Luo
Supervised by:	Nick Peng



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B.1 DTS Bandwidth

Test Result

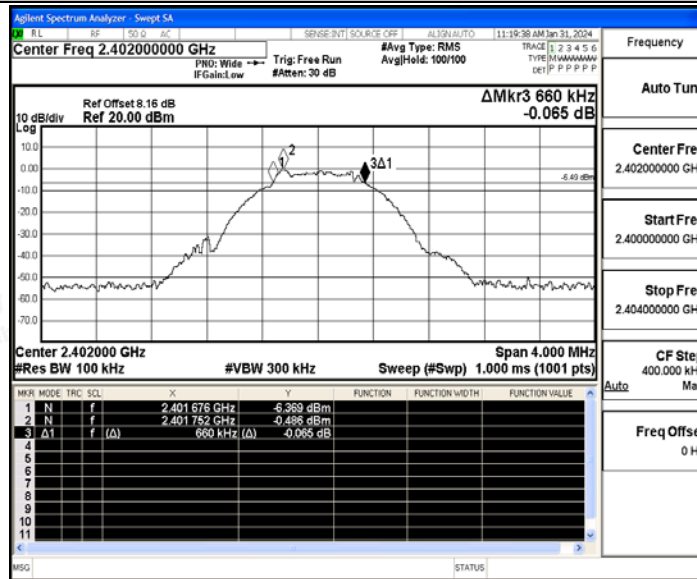
TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.660	2401.676	2402.336	0.5	PASS
		2440	0.656	2439.676	2440.332	0.5	PASS
		2480	0.664	2479.664	2480.328	0.5	PASS



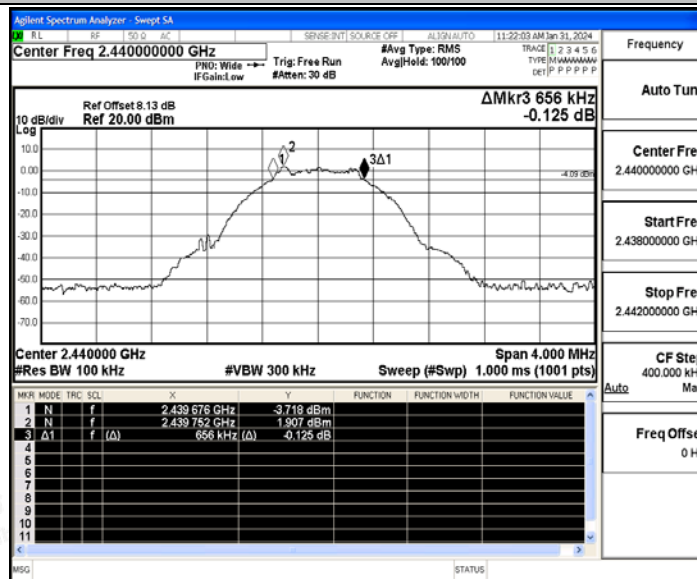


Test Graphs

BLE_1M_Ant1_2402

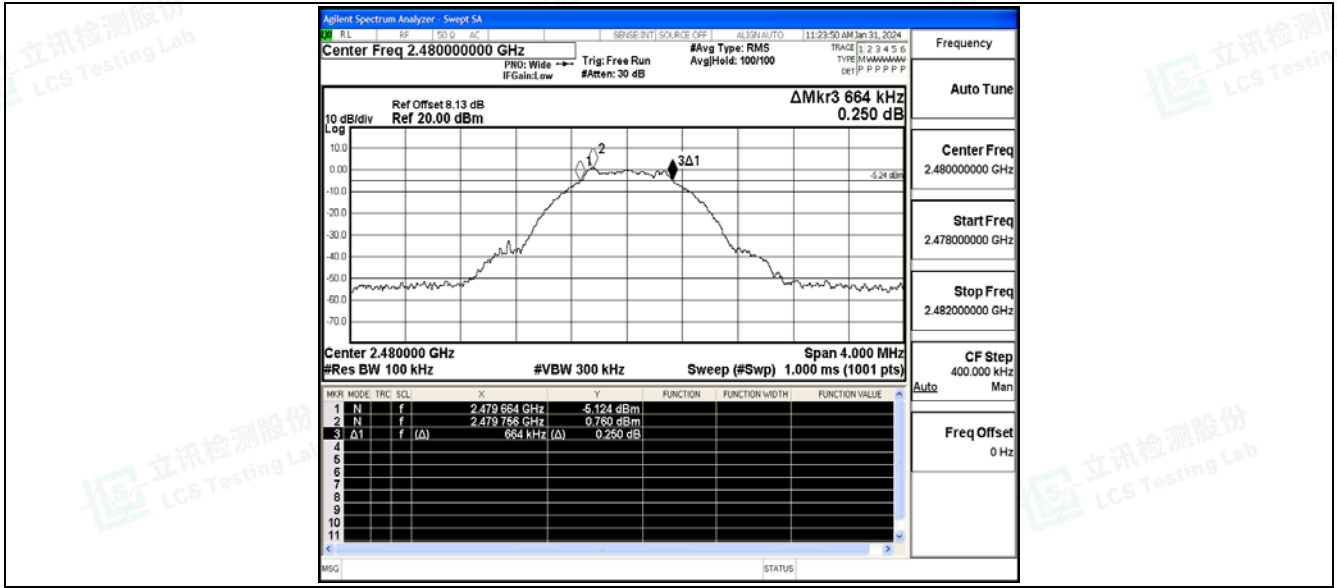


BLE_1M_Ant1_2440



BLE_1M_Ant1_2480







B.2 Maximum peak conducted output power

Test Result

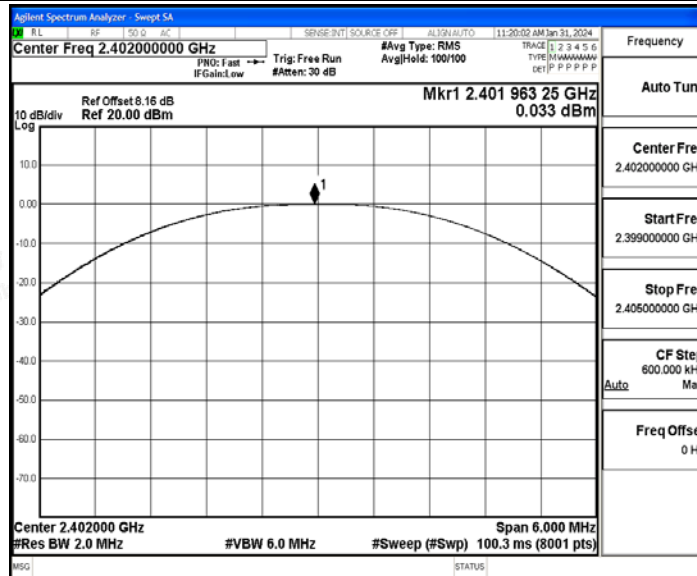
TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	0.03	≤30	PASS
		2440	2.37	≤30	PASS
		2480	1.28	≤30	PASS



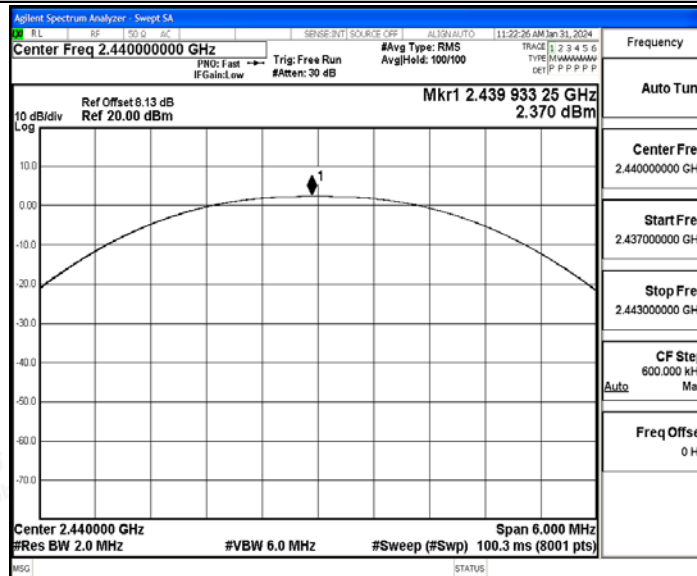


Test Graphs

BLE_1M_Ant1_2402

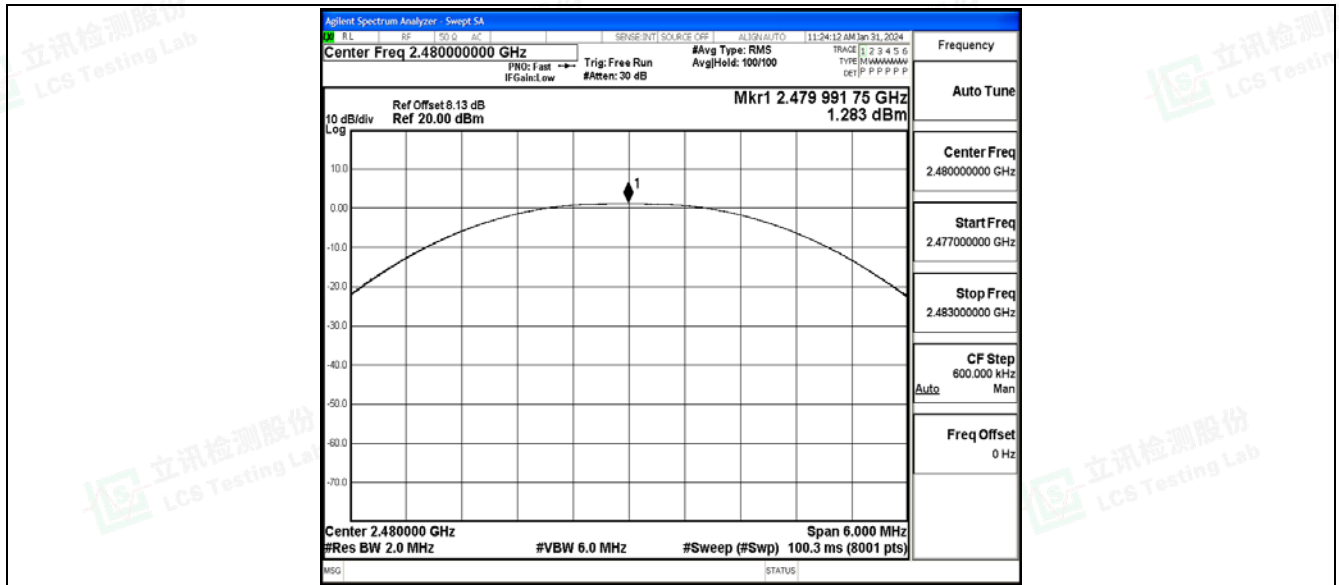


BLE_1M_Ant1_2440



BLE_1M_Ant1_2480





B.3 Maximum power spectral density

Test Result

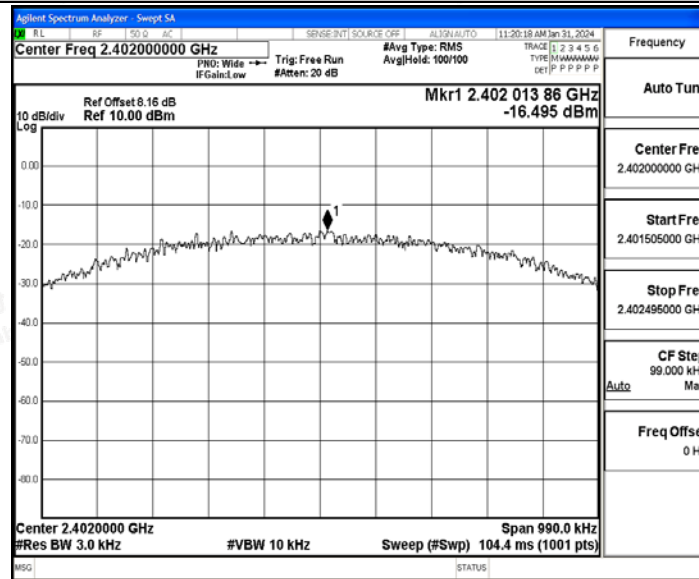
TestMode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-16.50	≤8.00	PASS
		2440	-14.14	≤8.00	PASS
		2480	-15.38	≤8.00	PASS



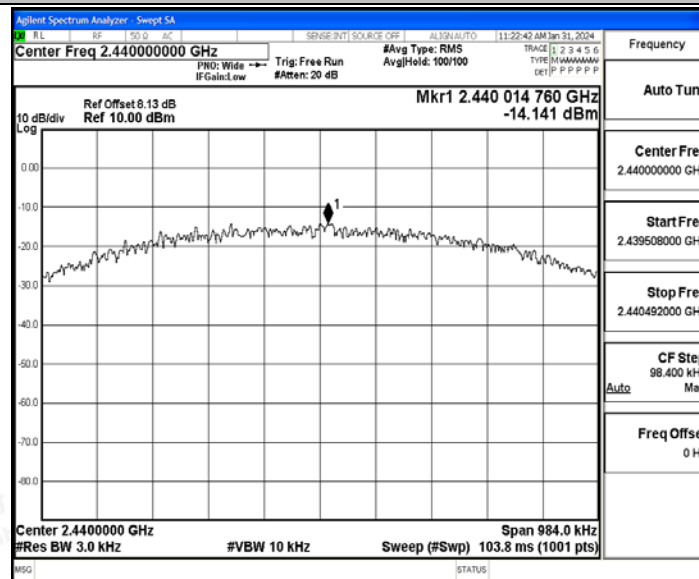


Test Graphs

BLE_1M_Ant1_2402

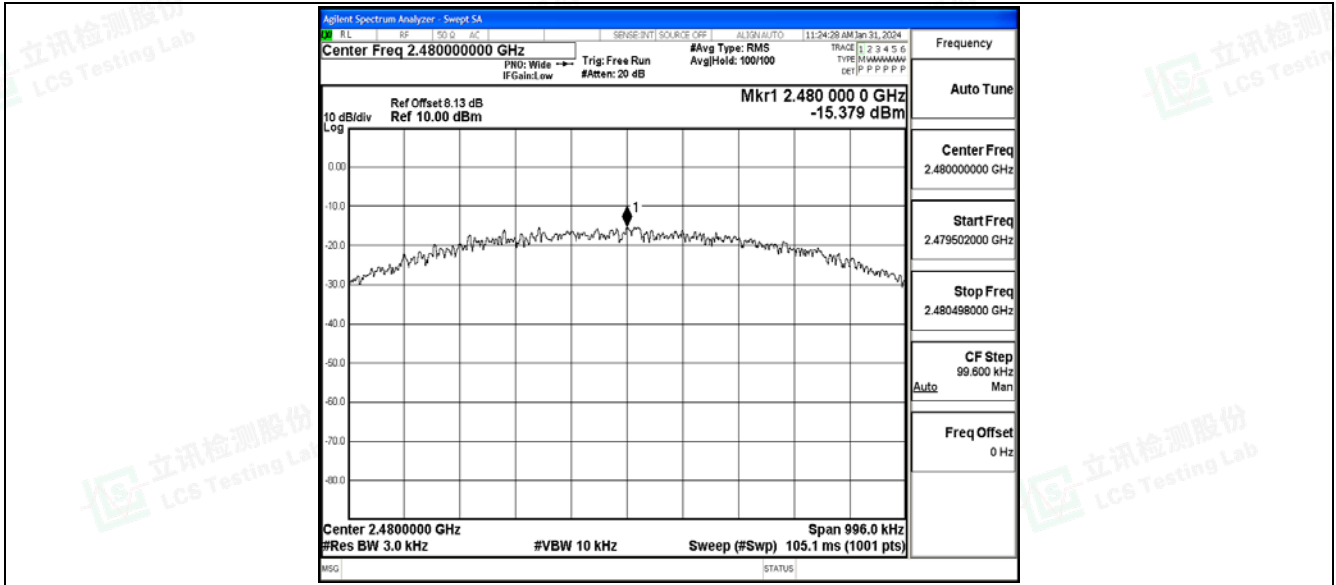


BLE_1M_Ant1_2440



BLE_1M_Ant1_2480







B.4 Band edge measurements

Test Result

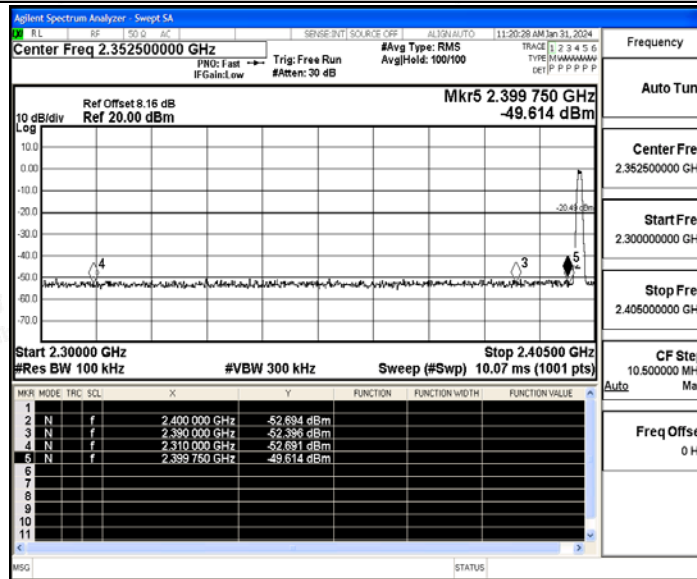
TestMode	Antenna	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	-0.49	-49.61	≤-20.49	PASS
		High	2480	0.77	-49.86	≤-19.23	PASS



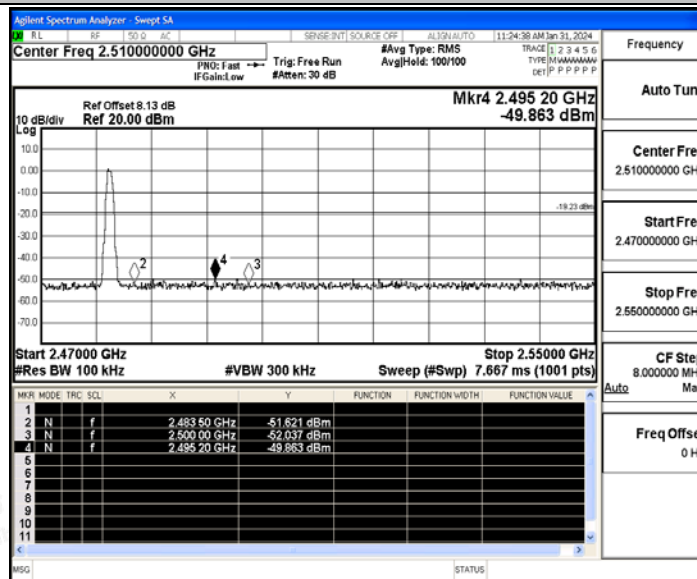


Test Graphs

BLE_1M_Ant1_Low_2402



BLE_1M_Ant1_High_2480





B.5 Conducted Spurious Emission

Test Result

TestMode	Antenna	Frequency[MHz]	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	30~1000	-0.49	-61.25	≤-20.49	PASS
			1000~26500	-0.49	-49.33	≤-20.49	PASS
		2440	30~1000	1.86	-62.15	≤-18.14	PASS
			1000~26500	1.86	-49.21	≤-18.14	PASS
		2480	30~1000	0.77	-62.05	≤-19.23	PASS
			1000~26500	0.77	-49.14	≤-19.23	PASS

Reference level measurement

Test Result

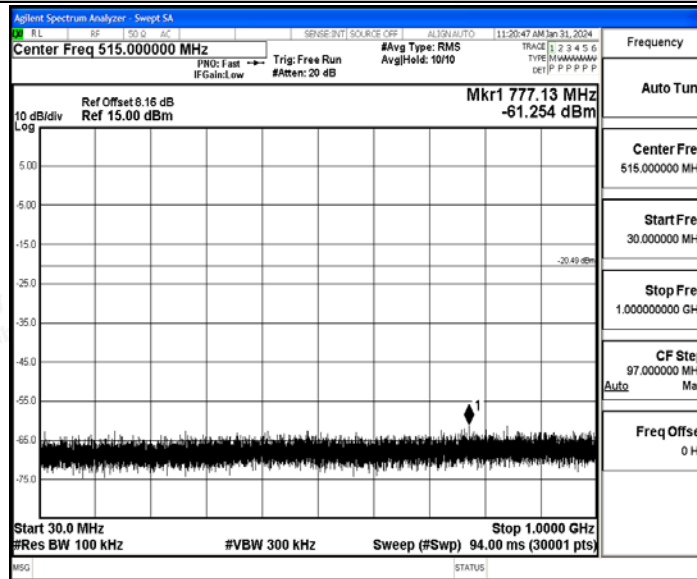
TestMode	Antenna	Freq(MHz)	Max.Point[MHz]	Result[dBm]
BLE_1M	Ant1	2402	2401.76	-0.49
		2440	2439.75	1.86
		2480	2479.75	0.77



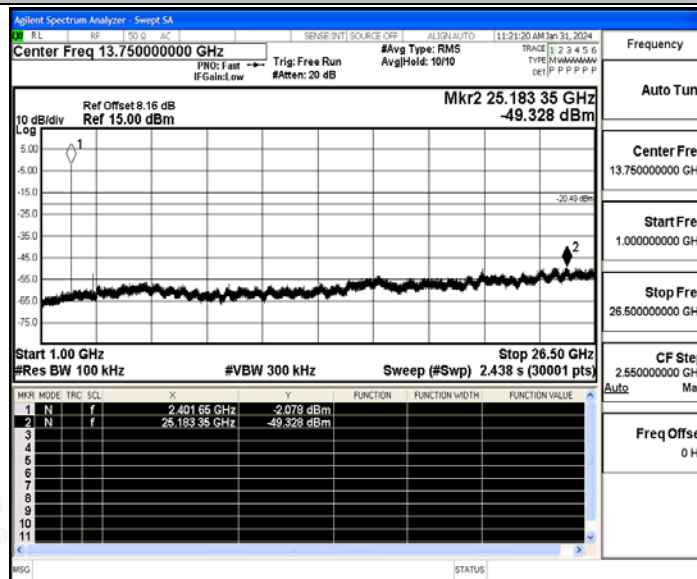


Test Graphs

BLE_1M_Ant1_2402_30~1000

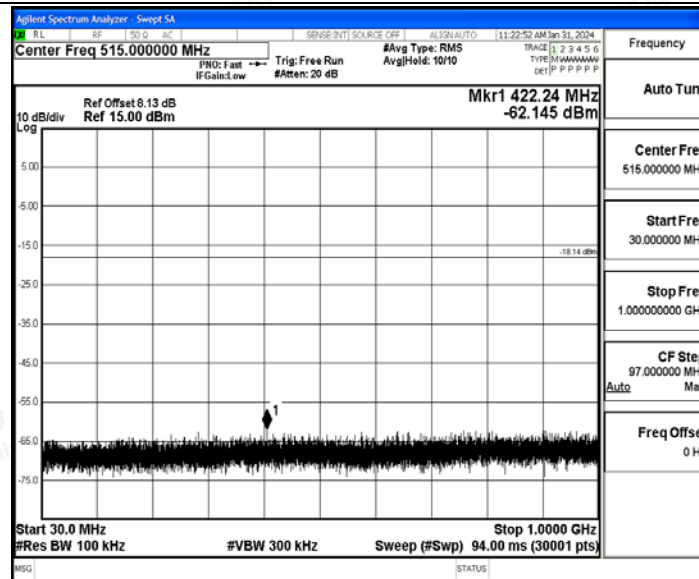


BLE_1M_Ant1_2402_1000~26500

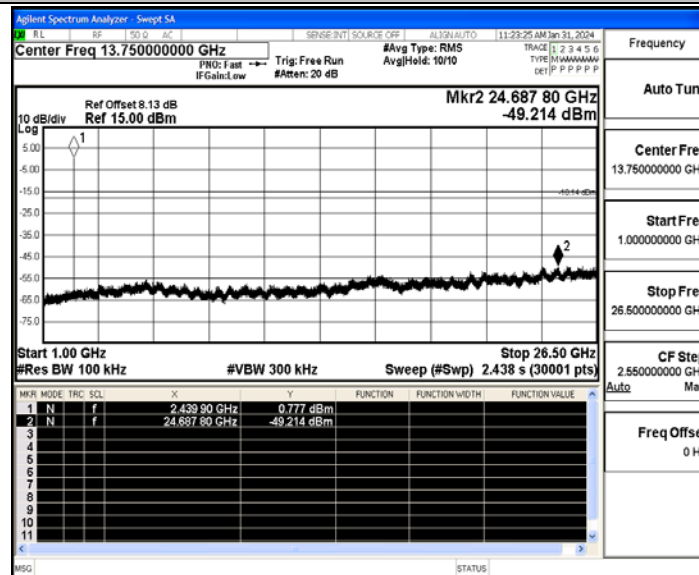


BLE_1M_Ant1_2440_30~1000



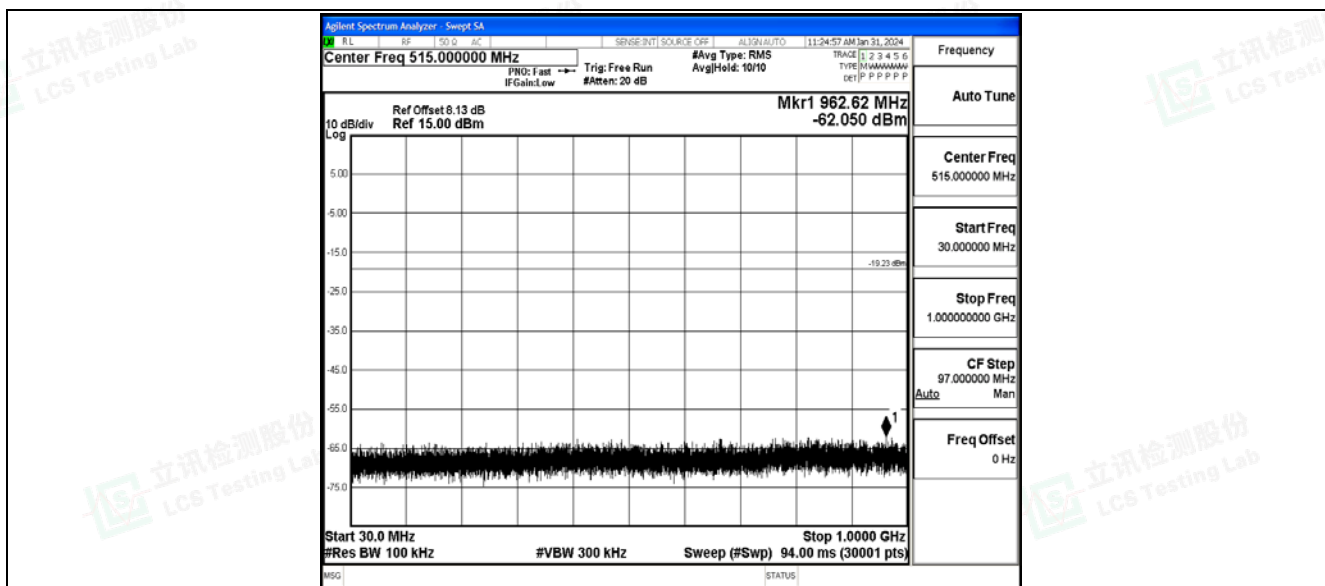


BLE_1M_Ant1_2440_1000~26500

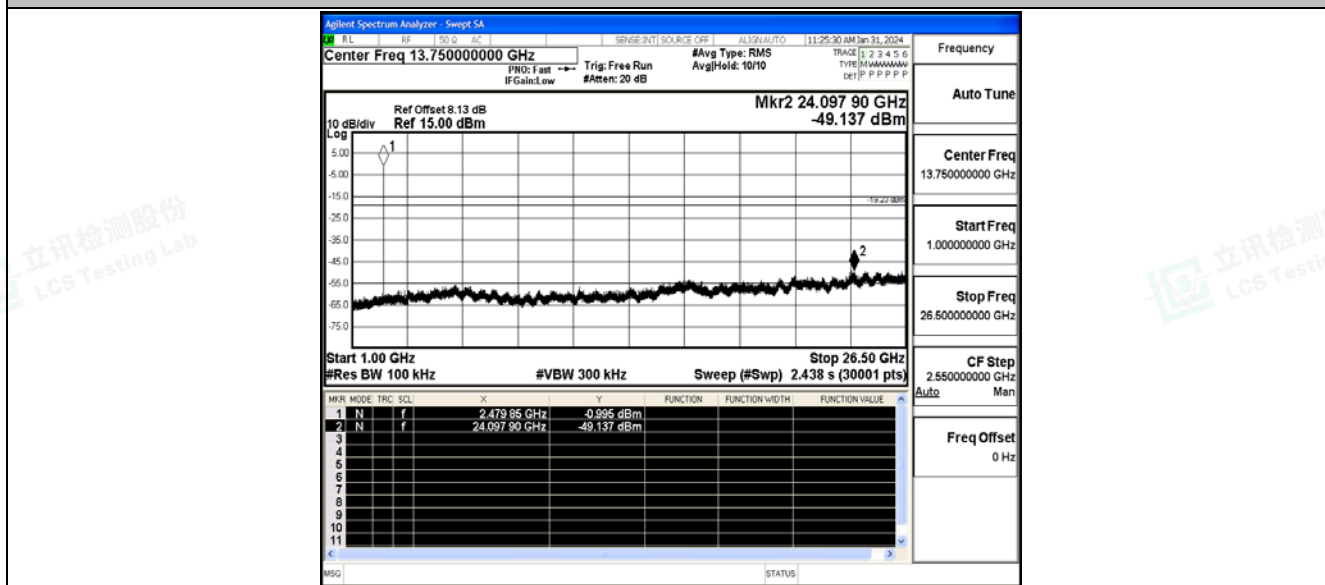


BLE_1M_Ant1_2480_30~1000





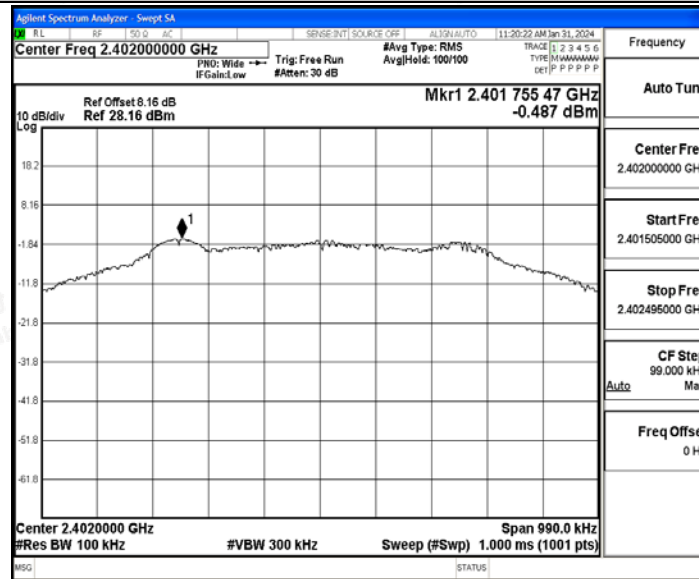
BLE_1M_Ant1_2480_1000~26500



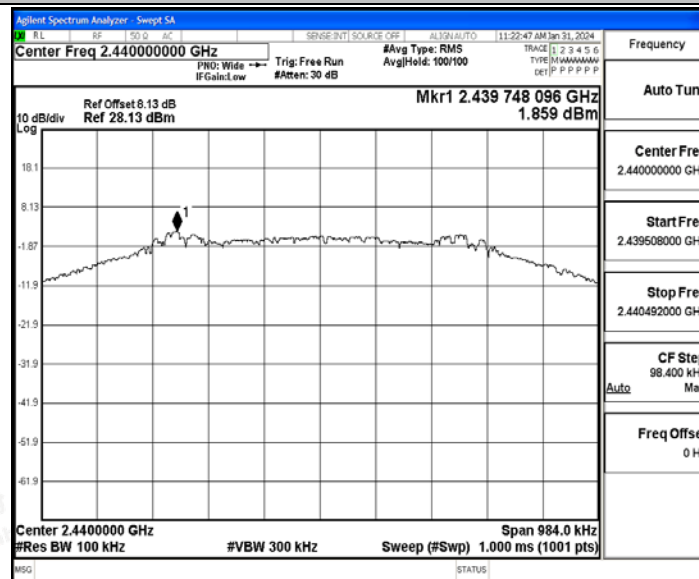


Test Graphs

BLE_1M_Ant1_2402

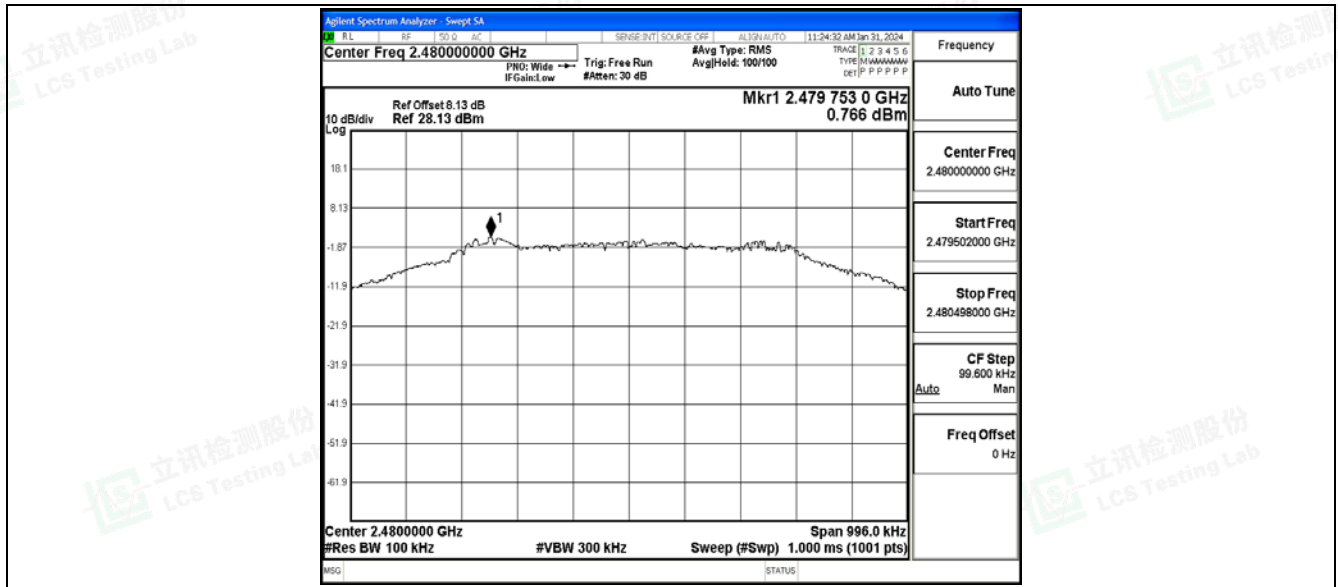


BLE_1M_Ant1_2440



BLE_1M_Ant1_2480







B.6 Duty Cycle

Test Result

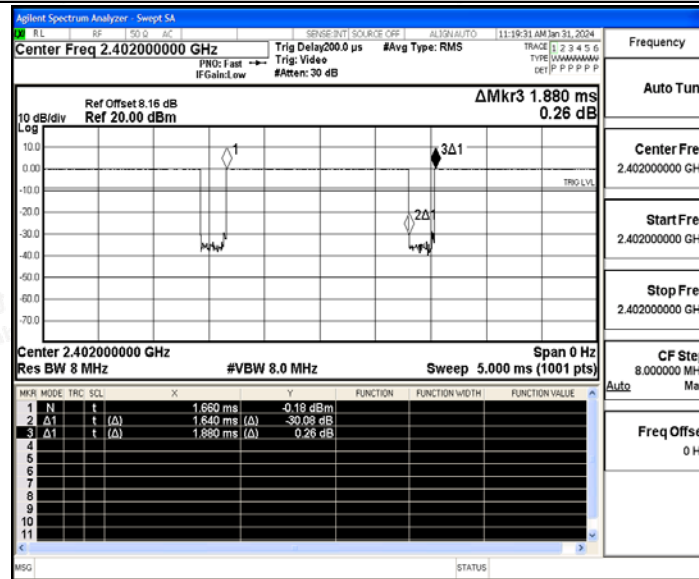
TestMode	Antenna	Frequency[MHz]	ON Time [ms]	Period [ms]	Duty Cycle [%]	Duty Cycle Factor[dB]	1/T Factor[dB]
BLE_1M	Ant1	2402	1.64	1.88	87.23	0.59	0.61
		2440	1.64	1.88	87.23	0.59	0.61
		2480	1.64	1.88	87.23	0.59	0.61



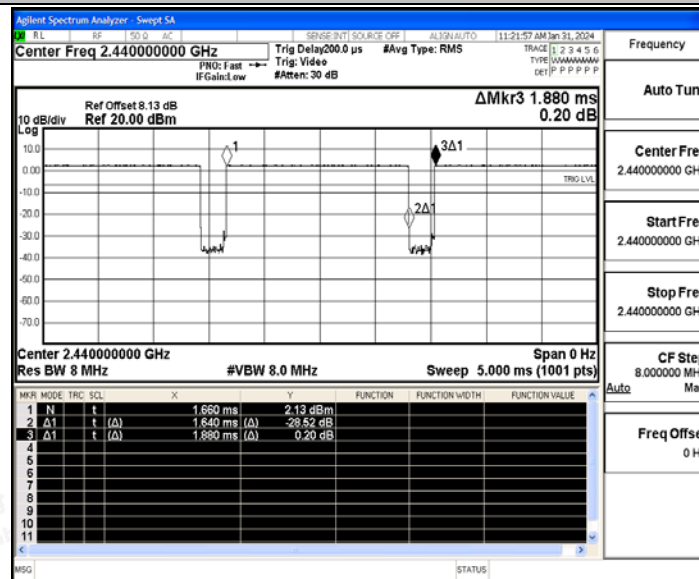


Test Graphs

BLE_1M_Ant1_2402

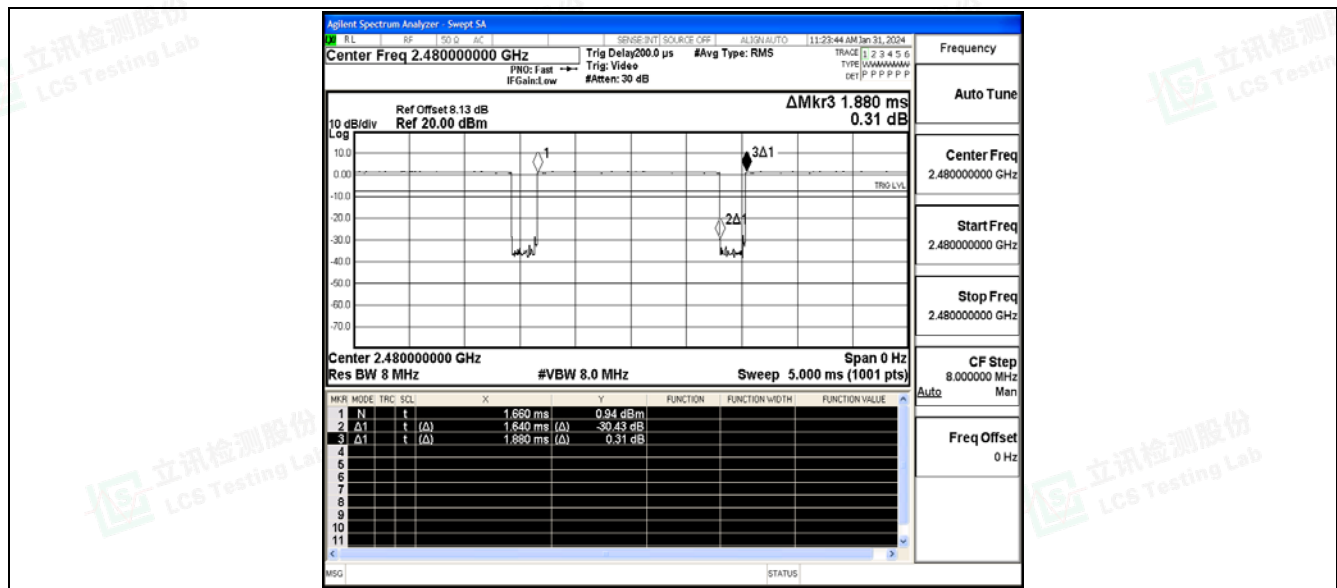


BLE_1M_Ant1_2440



BLE_1M_Ant1_2480





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B.7 Emissions in Restricted Bands

Test Result

Test Mode	Antenna	Channel Name	Frequency [MHz]	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
BLE_1M	Ant1	Low	2402	AV	2310.000	-49.69	≤-41.20	45.51	≤54	PASS
				AV	2382.740	-48.12	≤-41.20	47.08	≤54	PASS
				AV	2390.000	-48.9	≤-41.20	46.30	≤54	PASS
				Peak	2310.000	-42.01	≤-21.20	53.19	≤74	PASS
				Peak	2370.035	-38.55	≤-21.20	56.65	≤74	PASS
				Peak	2390.000	-42.97	≤-21.20	52.23	≤74	PASS
		High	2480	AV	2483.500	-49.19	≤-41.20	46.01	≤54	PASS
				AV	2488.320	-48.12	≤-41.20	47.08	≤54	PASS
				AV	2500.000	-49.43	≤-41.20	45.77	≤54	PASS
				Peak	2483.500	-41.61	≤-21.20	53.59	≤74	PASS
				Peak	2486.560	-38.68	≤-21.20	56.52	≤74	PASS
				Peak	2500.000	-42.52	≤-21.20	52.68	≤74	PASS

Note:

1. The Antenna Gain is compensated in the graph. The Correction Factor 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.

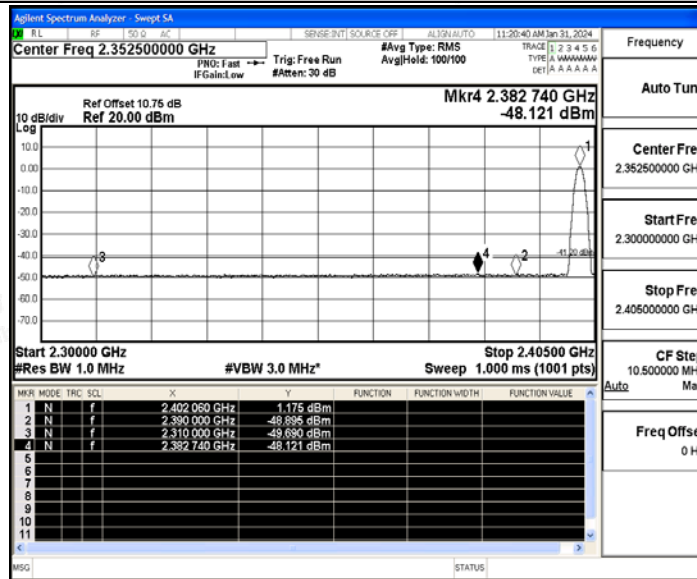


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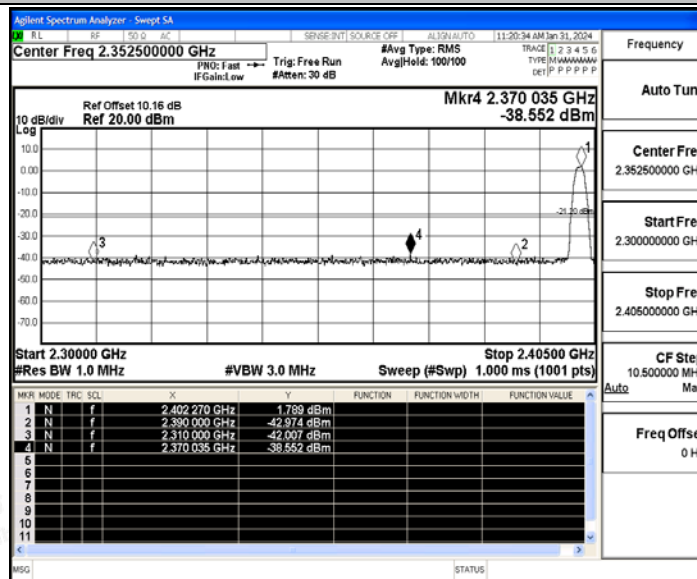


Test Graphs

BLE_1M_Ant1_Low_2402_AV

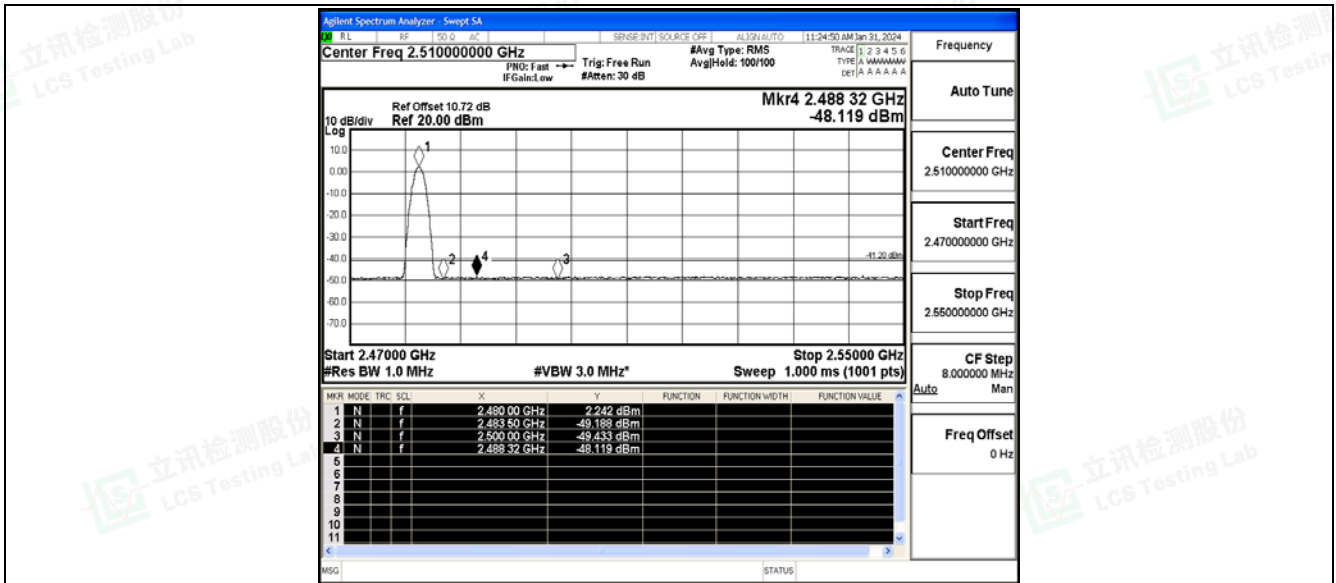


BLE_1M_Ant1_Low_2402_Peak



BLE_1M_Ant1_High_2480_AV





BLE_1M_Ant1_High_2480_Peak

