



## Appendix A

### RF Test Data for BT LE (Conducted Measurement)

**Product Name:** Light Master

**Test Model:** Light Master IV

#### Environmental Conditions

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





## A.1 DTS Bandwidth

### Test Result

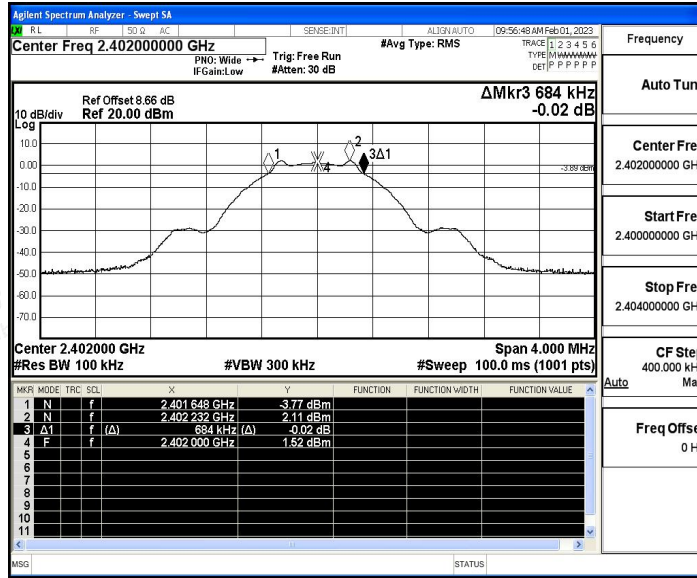
TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.684	2401.648	2402.332	0.5	PASS
		2440	0.672	2439.656	2440.328	0.5	PASS
		2480	0.664	2479.656	2480.320	0.5	PASS



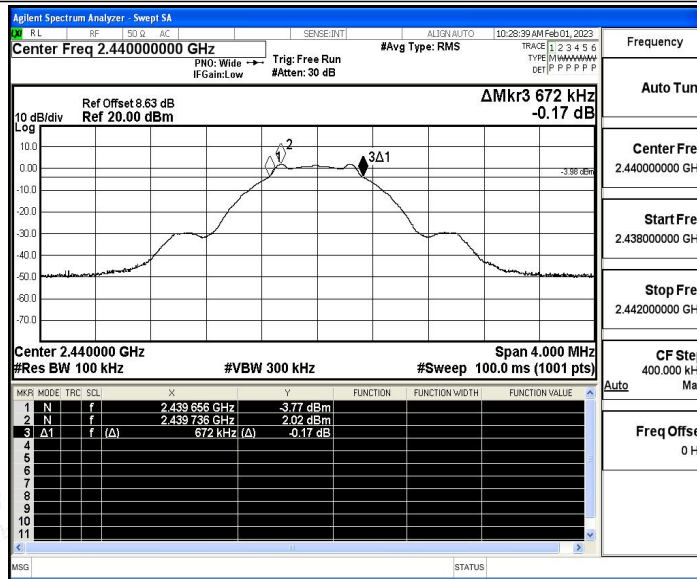


### Test Graphs

#### BLE\_1M\_Ant1\_2402

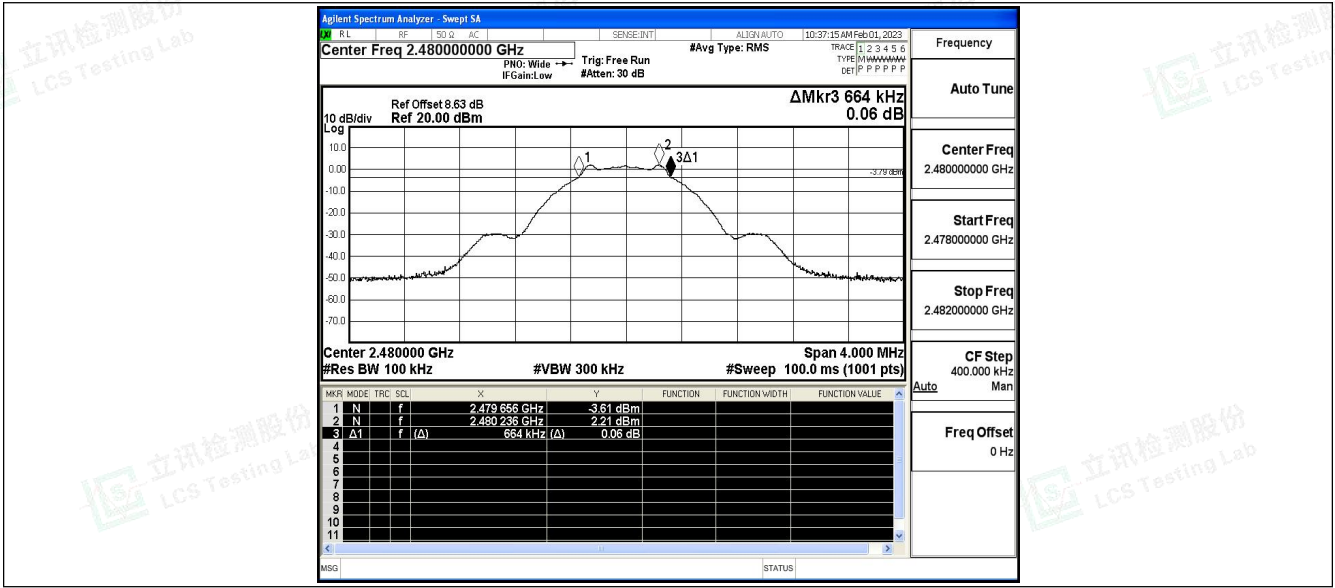


#### BLE\_1M\_Ant1\_2440



#### BLE\_1M\_Ant1\_2480







## A.2 Maximum conducted output power

### Test Result

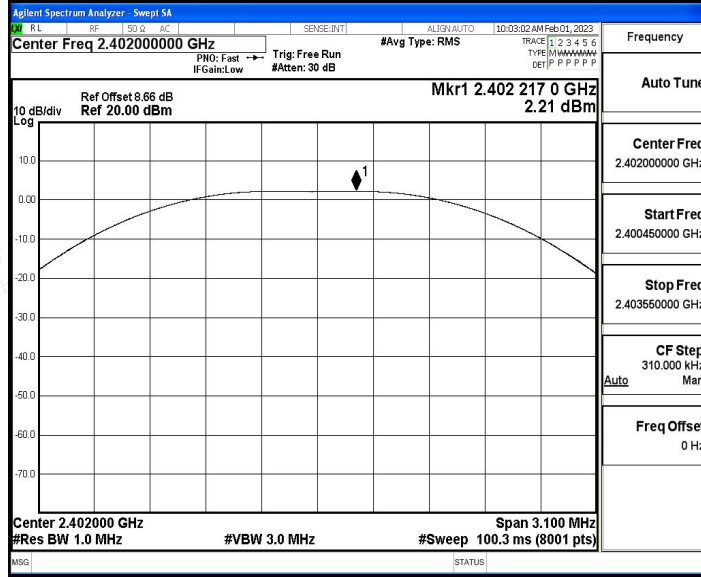
TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	2.21	≤30	PASS
		2440	2.12	≤30	PASS
		2480	2.32	≤30	PASS



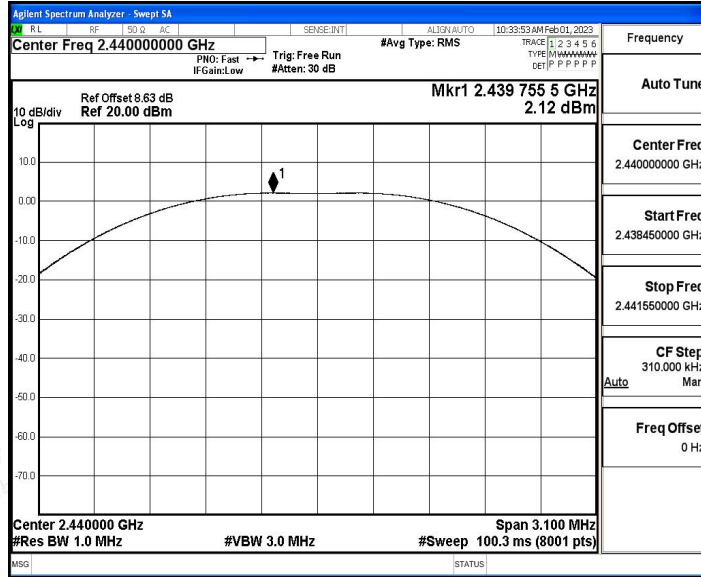


### Test Graphs

BLE\_1M\_Ant1\_2402

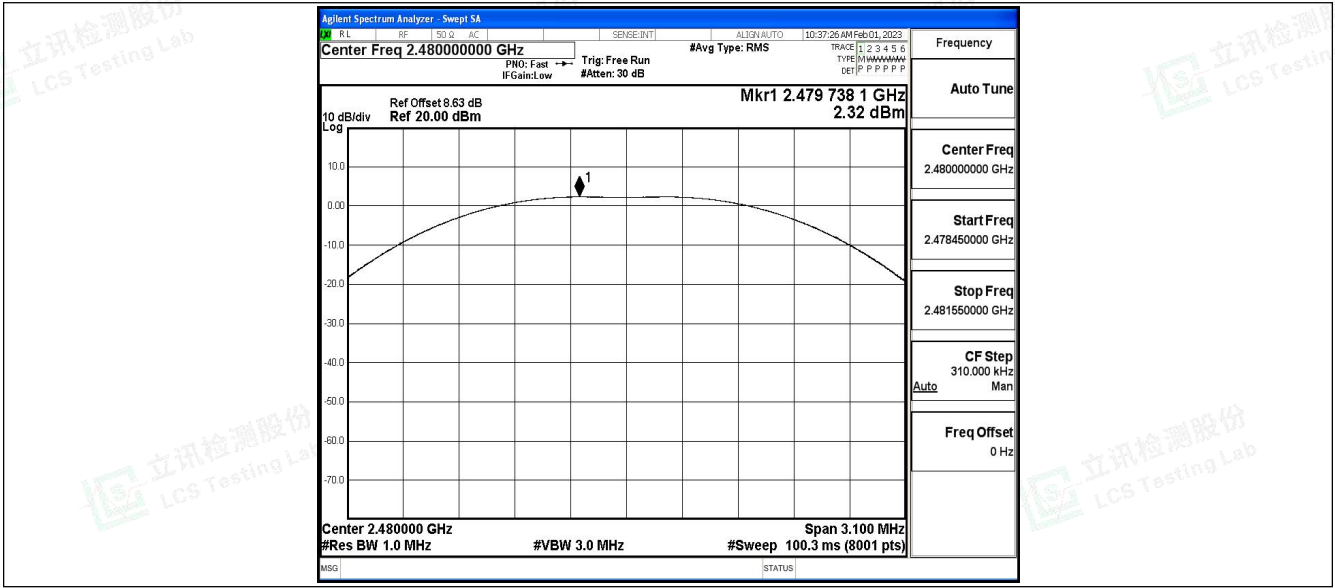


BLE\_1M\_Ant1\_2440



BLE\_1M\_Ant1\_2480





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 Scan code to check authenticity



### A.3 Maximum power spectral density

#### Test Result

TestMode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-5.36	≤8.00	PASS
		2440	-9.09	≤8.00	PASS
		2480	-7.76	≤8.00	PASS

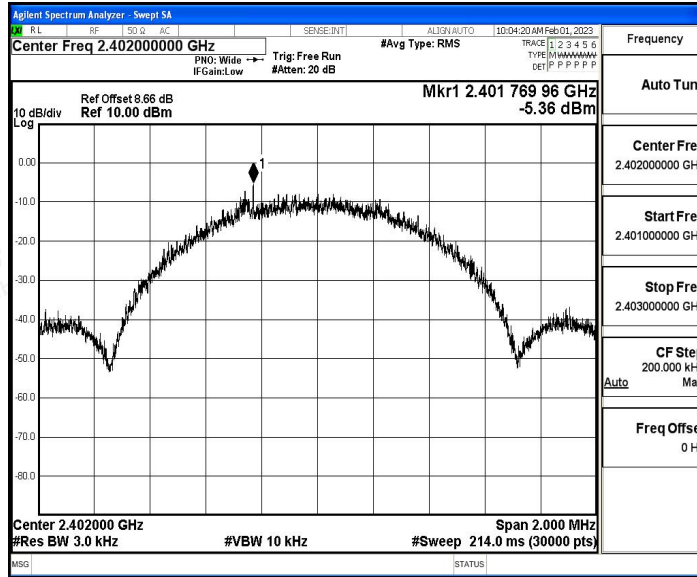




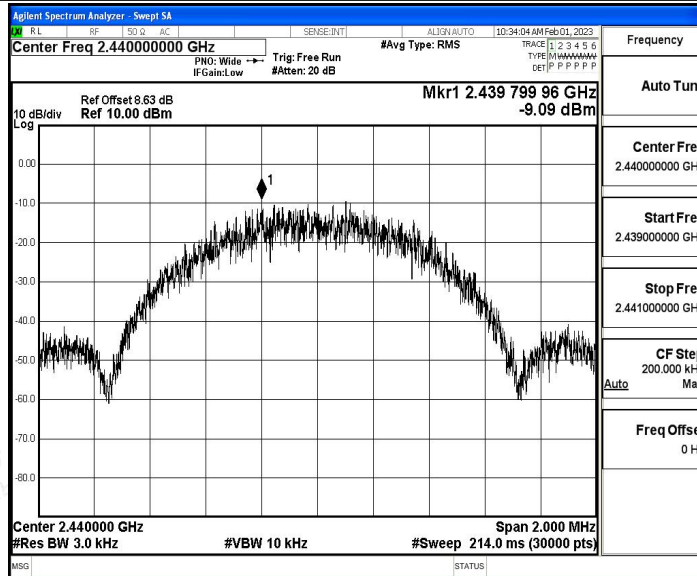


### Test Graphs

BLE\_1M\_Ant1\_2402

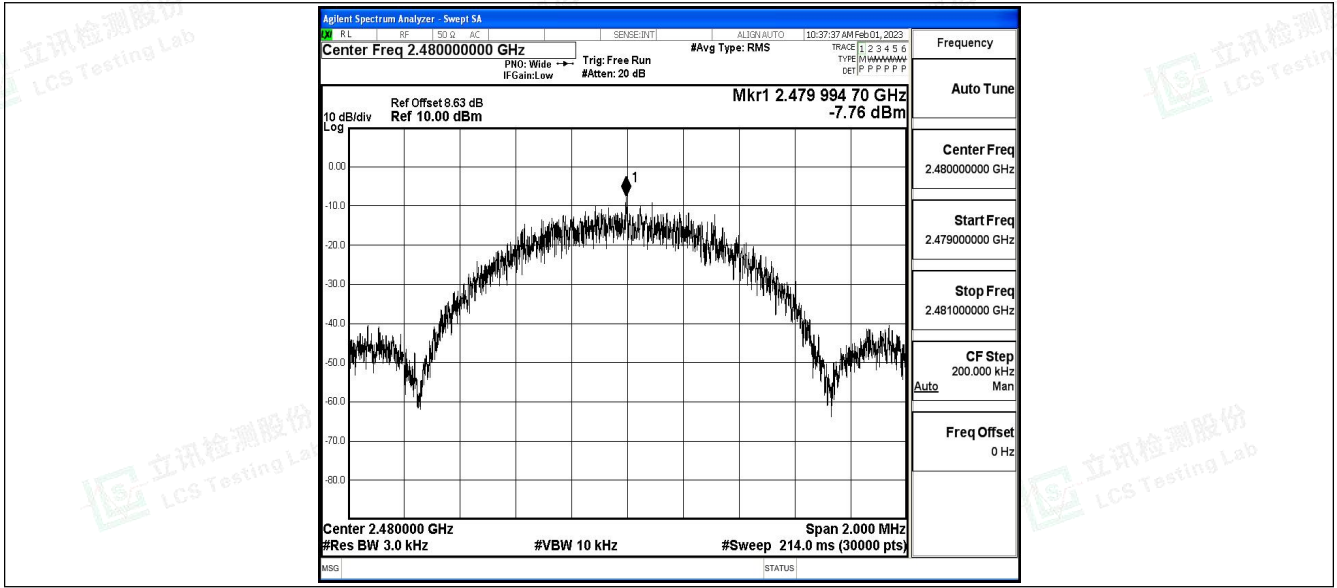


BLE\_1M\_Ant1\_2440



BLE\_1M\_Ant1\_2480







## A.4 Band edge measurements

### Test Result

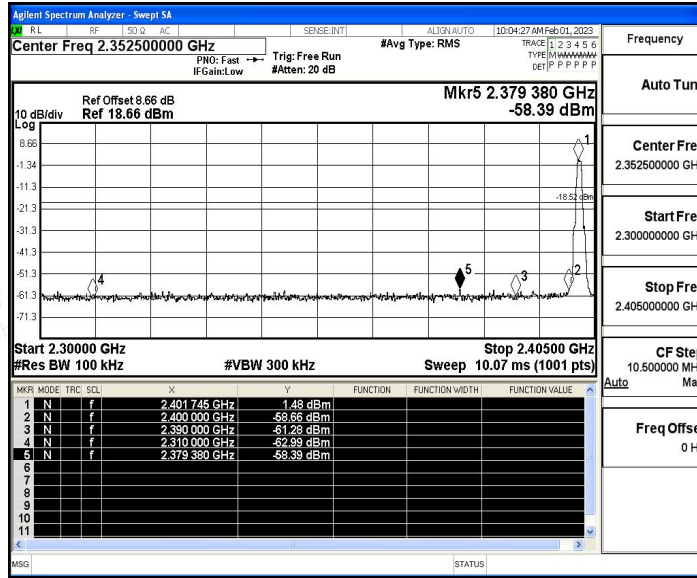
TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	1.48	-58.39	≤-18.52	PASS
		High	2480	1.74	-58.45	≤-18.26	PASS



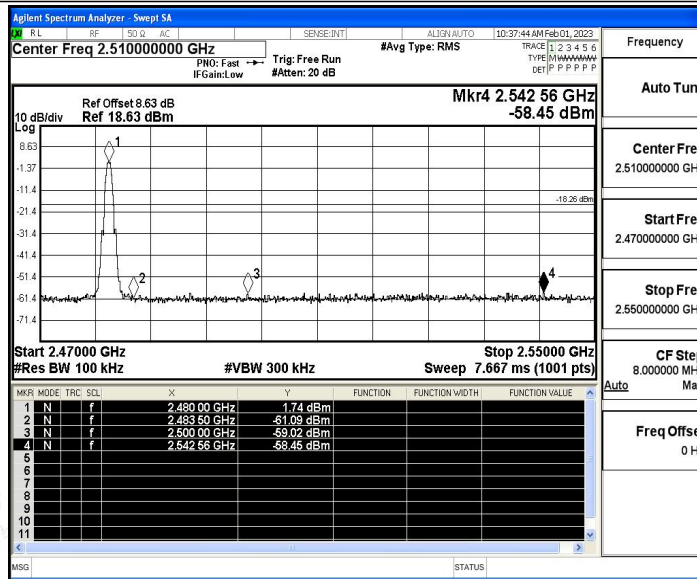


### Test Graphs

#### BLE\_1M\_Ant1\_Low\_2402



#### BLE\_1M\_Ant1\_High\_2480





### A.5 Conducted Spurious Emission

#### Test Result

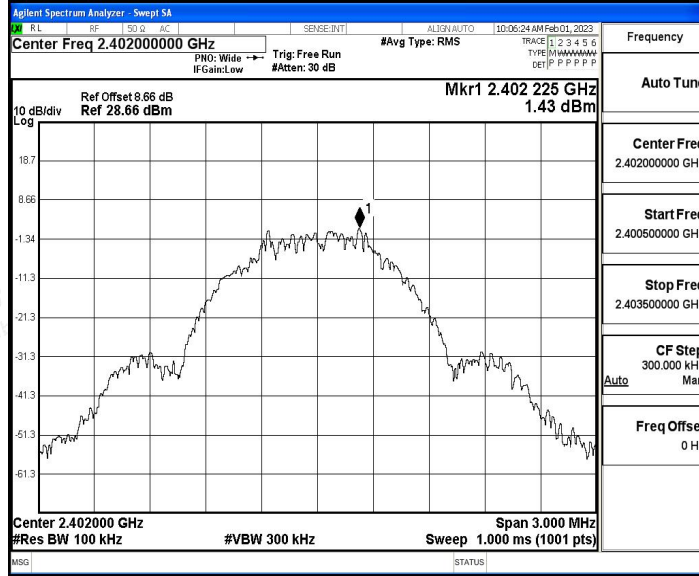
TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	1.43	1.43	---	PASS
			30~1000	1.43	-60.09	≤-18.57	PASS
			1000~26500	1.43	-46.5	≤-18.57	PASS
		2440	Reference	1.48	1.48	---	PASS
			30~1000	1.48	-59.94	≤-18.52	PASS
			1000~26500	1.48	-46.39	≤-18.52	PASS
		2480	Reference	1.23	1.23	---	PASS
			30~1000	1.23	-60.06	≤-18.77	PASS
			1000~26500	1.23	-45.71	≤-18.77	PASS



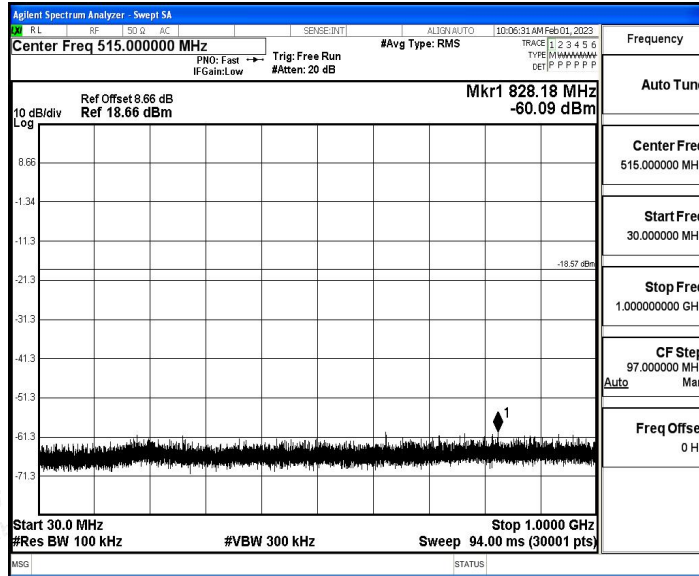


### Test Graphs

BLE\_1M\_Ant1\_2402\_0~Reference

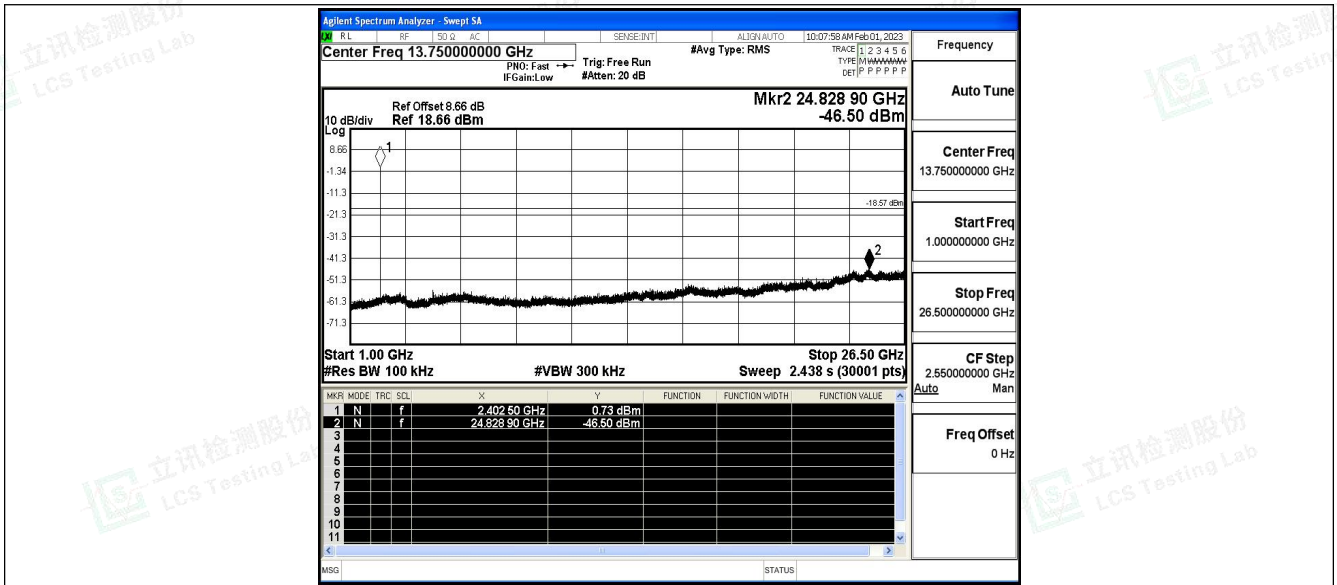


BLE\_1M\_Ant1\_2402\_30~1000

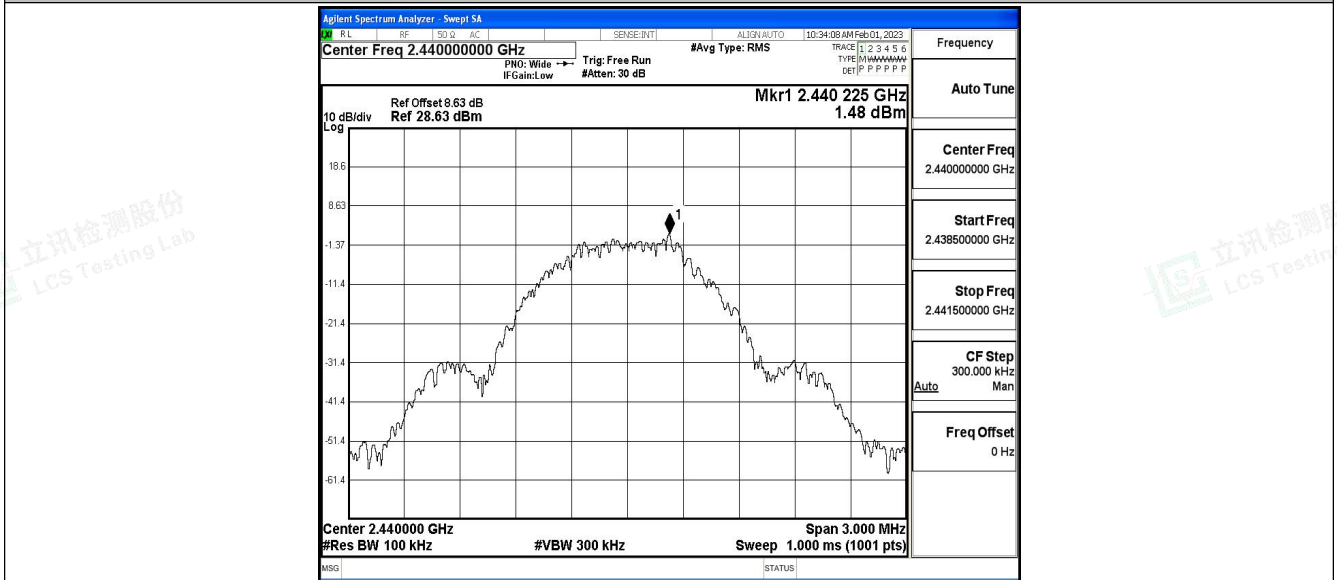


BLE\_1M\_Ant1\_2402\_1000~26500



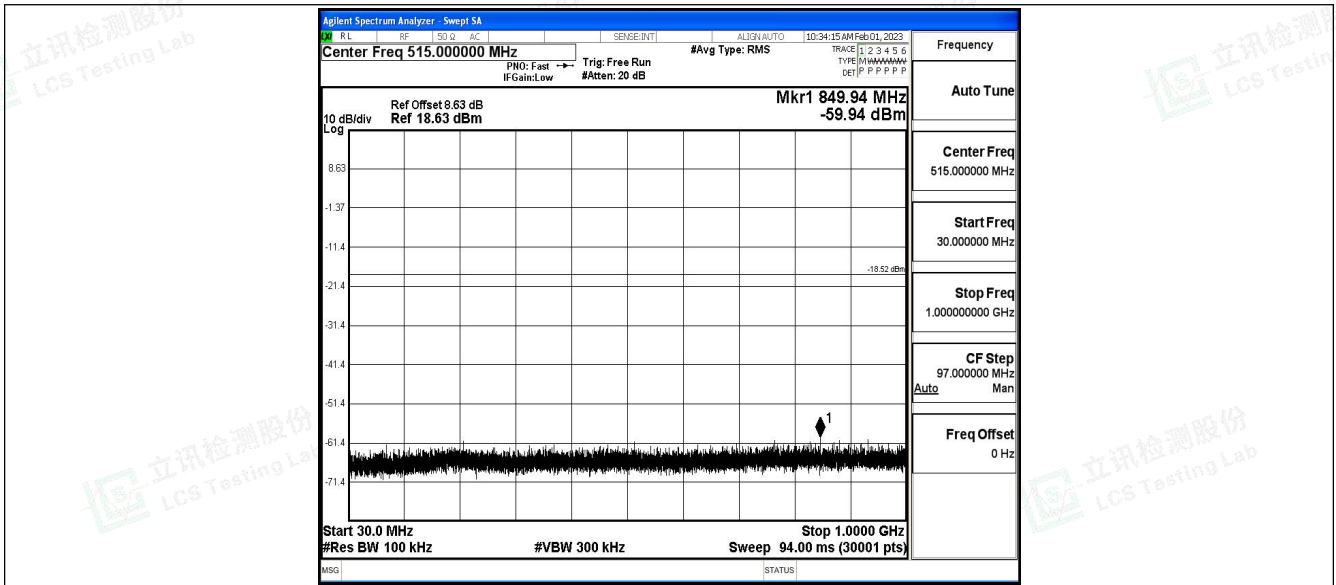


BLE\_1M\_Ant1\_2440\_0~Reference

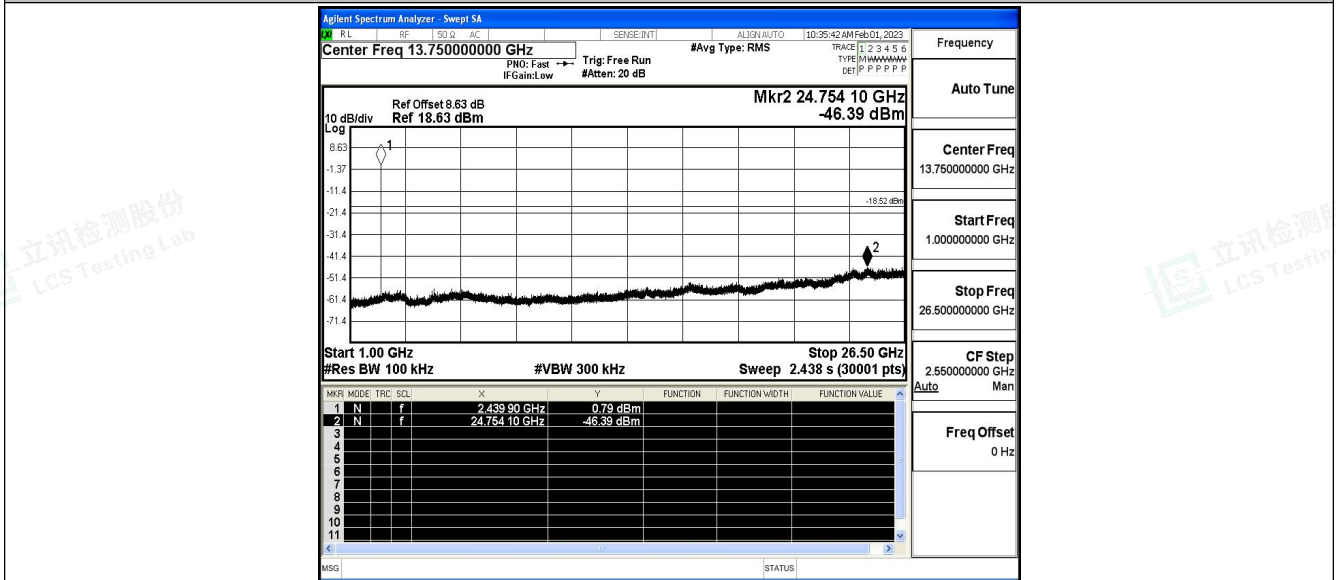


BLE\_1M\_Ant1\_2440\_30~1000





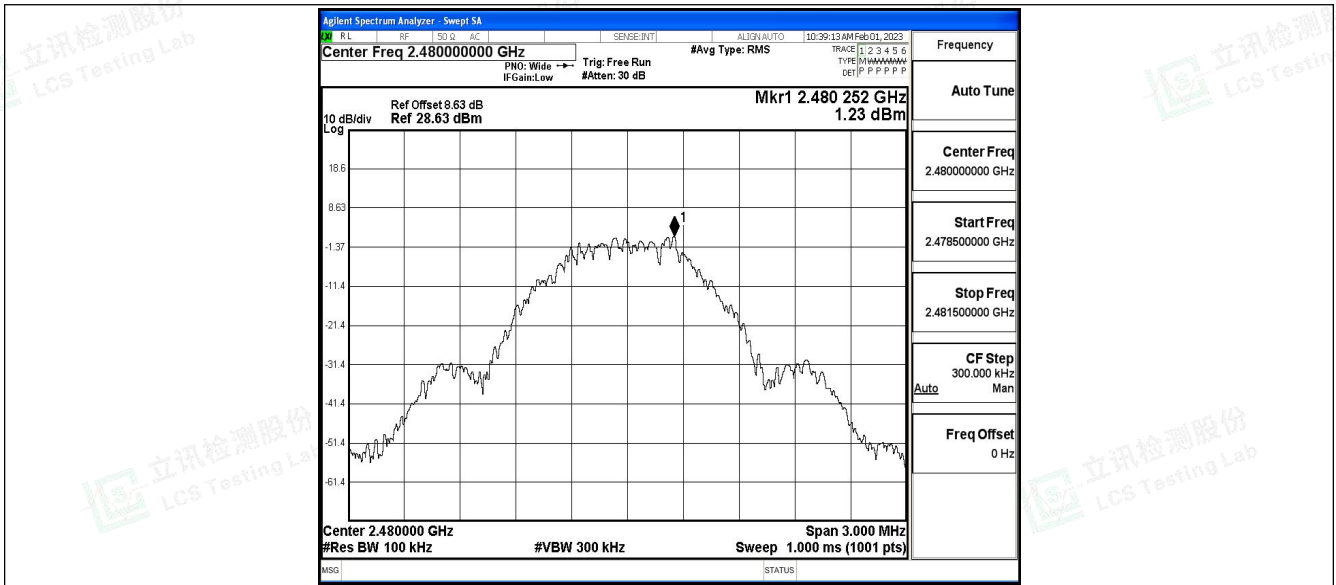
BLE\_1M\_Ant1\_2440\_1000~26500



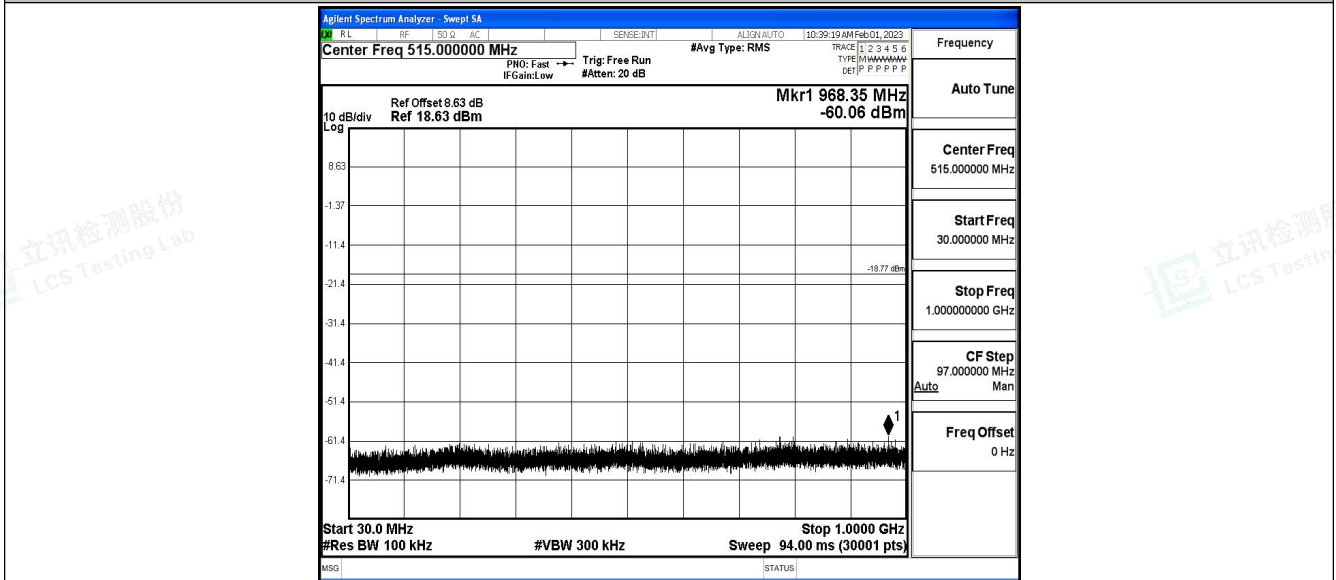
BLE\_1M\_Ant1\_2480\_0~Reference





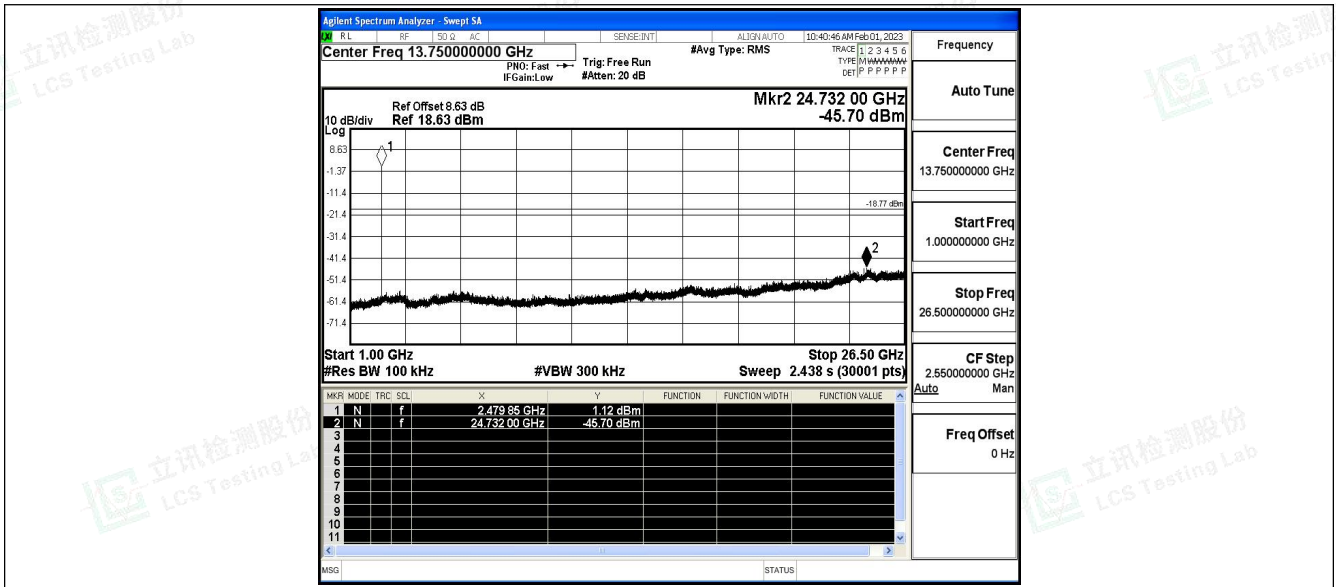


BLE\_1M\_Ant1\_2480\_30~100



BLE\_1M\_Ant1\_2480\_1000~26500







### A.6 Duty Cycle

#### Test Result

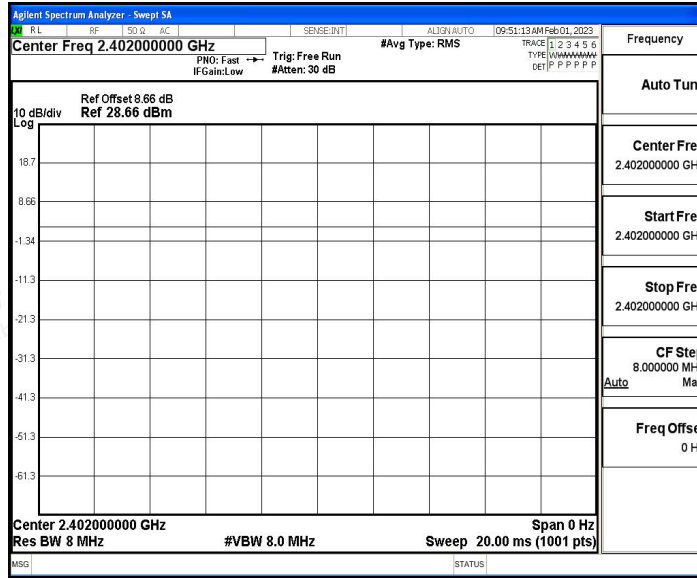
TestMode	Antenna	Channel	ON Time [ms]	Period [ms]	X	DC [%]	xFactor	1/T	Limit	Verdict
BLE_1M	Ant1	2402	0.00	0.00	0	100	0	0.01	---	---
		2440	0.00	0.00	0	100	0	0.01	---	---
		2480	0.00	0.00	0	100	0	0.01	---	---



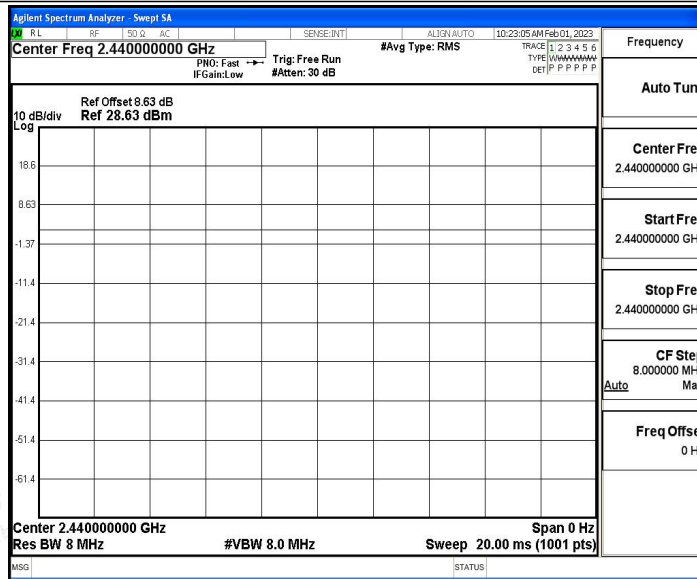


### Test Graphs

BLE\_1M\_Ant1\_2402

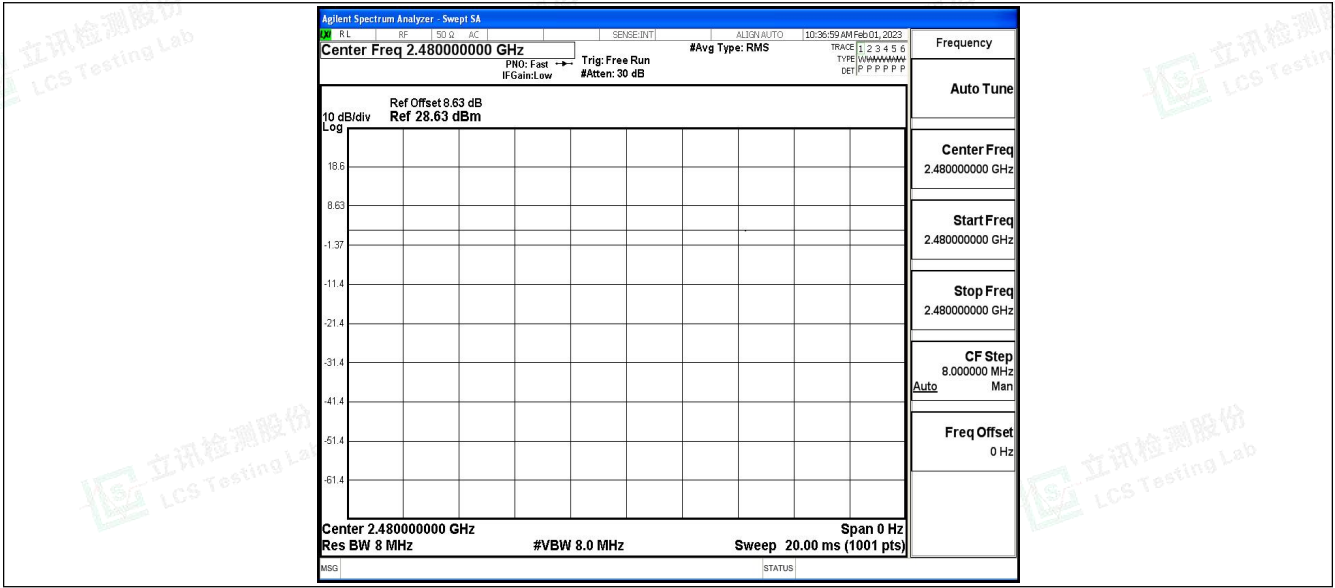


BLE\_1M\_Ant1\_2440



BLE\_1M\_Ant1\_2480





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### A.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	-58.34	≤-41.20	36.86	≤54	PASS
				AV	2389.775	-57.91	≤-41.20	37.29	≤54	PASS
				AV	2390.000	-57.94	≤-41.20	37.26	≤54	PASS
				Peak	2310.000	-55.31	≤-21.20	39.89	≤74	PASS
				Peak	2371.820	-47.69	≤-21.20	47.51	≤74	PASS
				Peak	2390.000	-53.4	≤-21.20	41.80	≤74	PASS
		High	2480	AV	2483.500	-53.46	≤-41.20	41.74	≤54	PASS
				AV	2483.520	-53.46	≤-41.20	41.74	≤54	PASS
				AV	2500.000	-57.38	≤-41.20	37.82	≤54	PASS
				Peak	2483.500	-51.84	≤-21.20	43.36	≤74	PASS
				Peak	2484.480	-48.36	≤-21.20	46.84	≤74	PASS
				Peak	2500.000	-52.95	≤-21.20	42.25	≤74	PASS

Note:

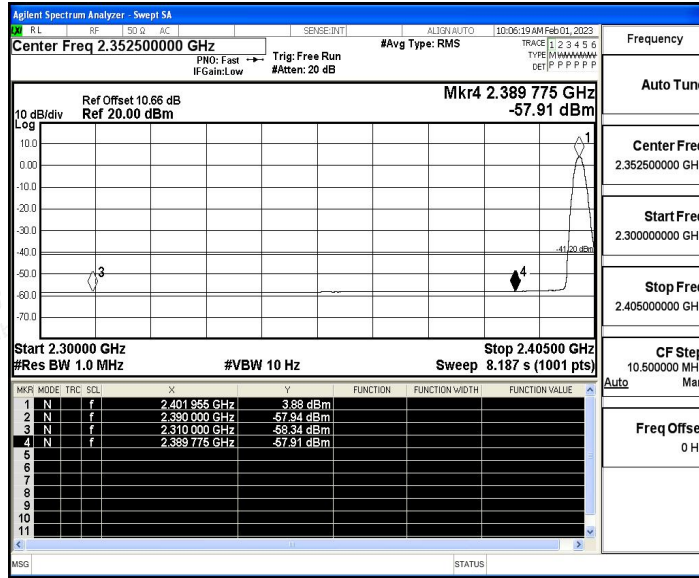
- The Antenna Gain is compensated in the graph.
- The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.



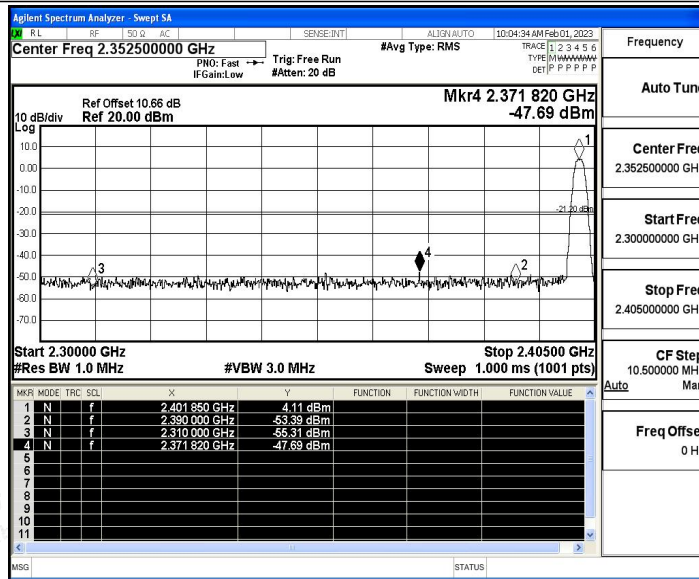


### Test Graphs

#### BLE\_1M\_Ant1\_Low\_2402\_AV

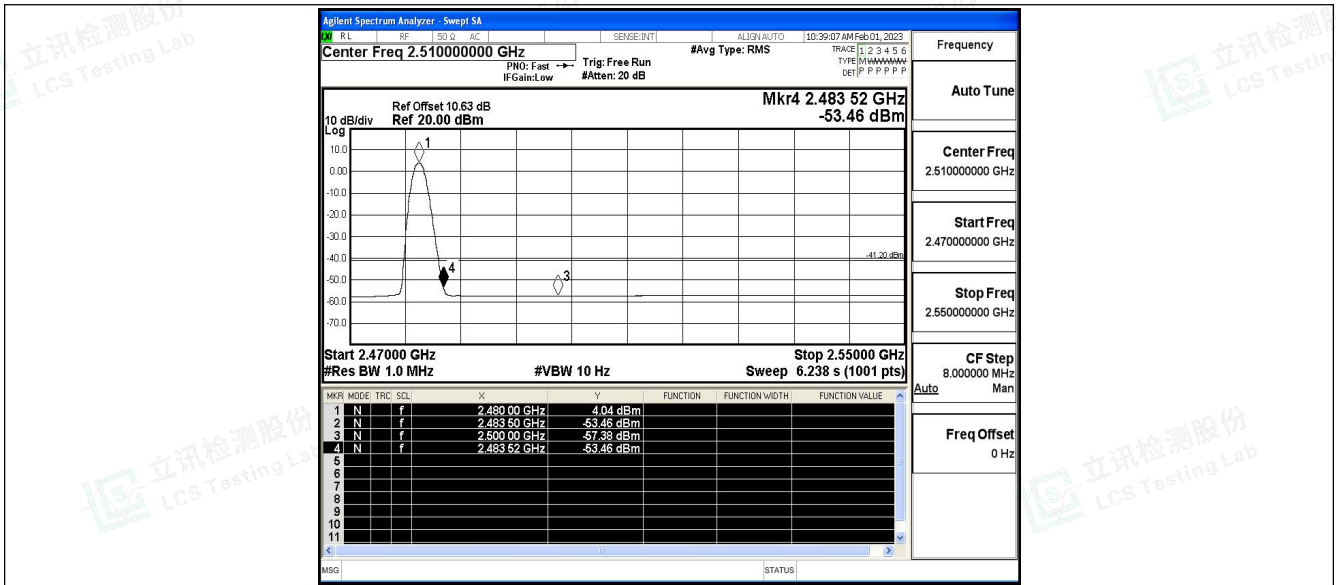


#### BLE\_1M\_Ant1\_Low\_2402\_Peak



#### BLE\_1M\_Ant1\_High\_2480\_AV





BLE\_1M\_Ant1\_High\_2480\_Peak

