



Appendix B

RF Test Data for BT LE (Conducted Measurement)

Product Name: Dobuds ONE

Test Model: DTW-E10

Environmental Conditions

Temperature:	23.5 °C
Relative Humidity:	52.2%
ATM Pressure:	100.0 kPa
Test Engineer:	<i>kayHu</i> Kay Hu
Supervised by:	<i>LiHuan</i> Li Huan





B.1 DTS Bandwidth

Test Result

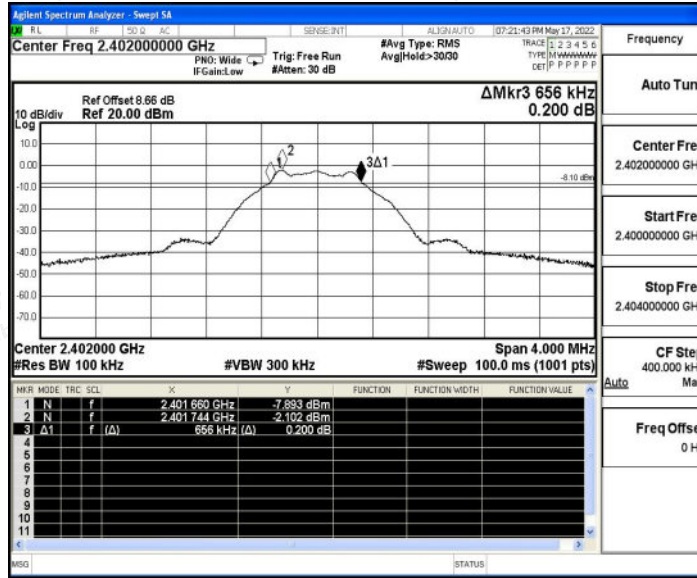
TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.656	2401.660	2402.316	0.5	PASS
		2440	0.656	2439.660	2440.316	0.5	PASS
		2480	0.656	2479.660	2480.316	0.5	PASS
BLE_2M	Ant1	2402	1.140	2401.416	2402.556	0.5	PASS
		2440	1.136	2439.416	2440.552	0.5	PASS
		2480	1.140	2479.420	2480.560	0.5	PASS



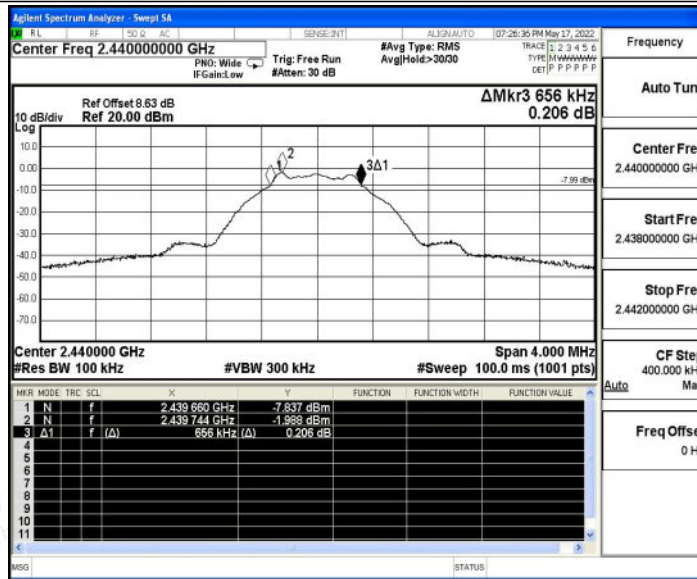


Test Graphs

BLE_1M_Ant1_2402

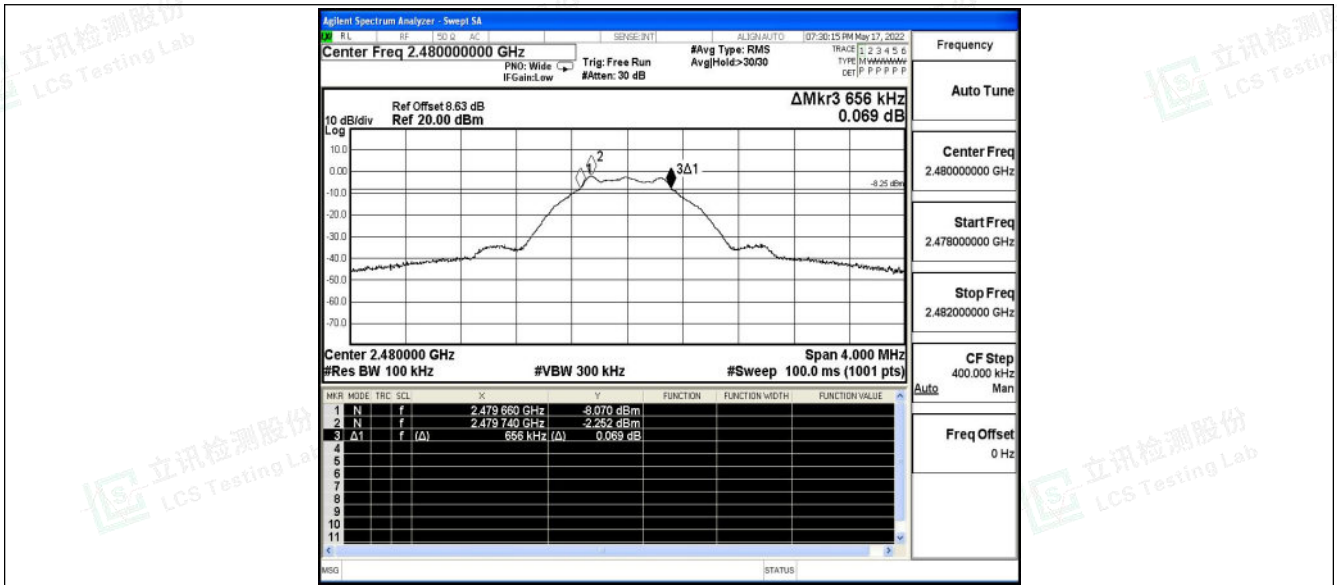


BLE_1M_Ant1_2440

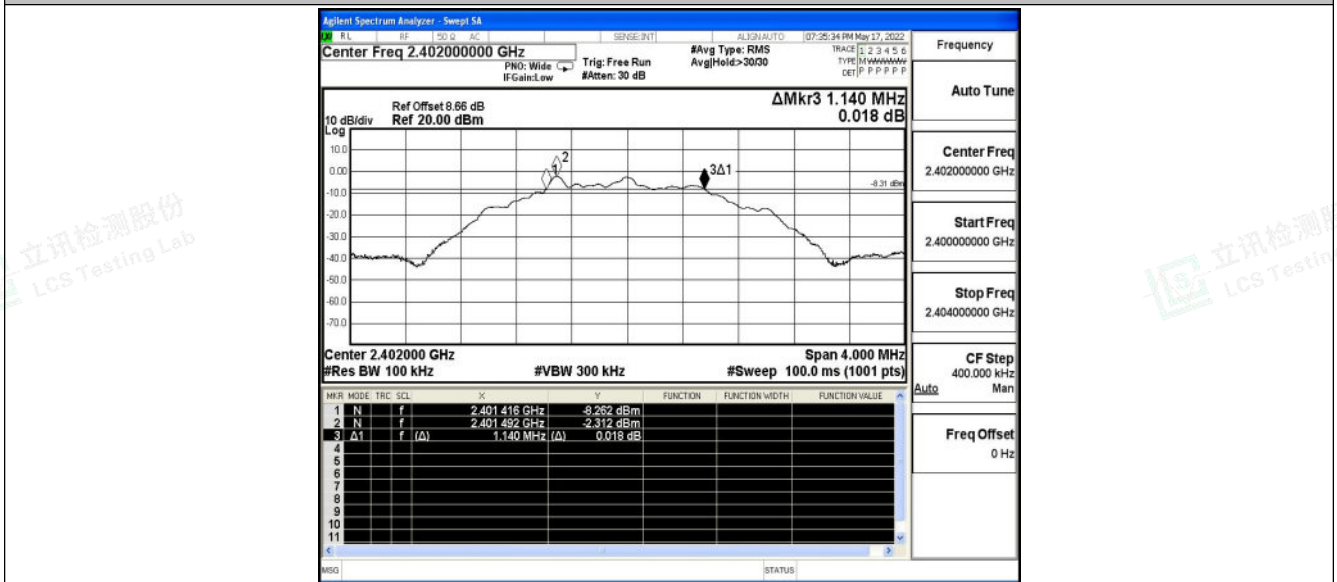


BLE_1M_Ant1_2480



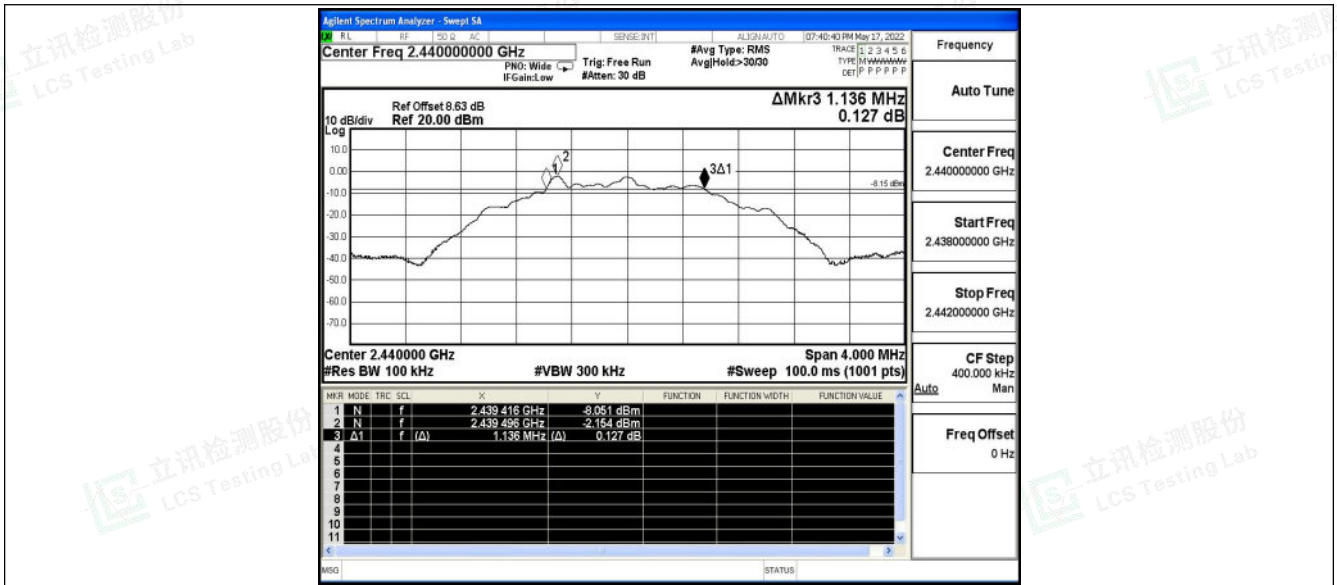


BLE_2M_Ant1_2402

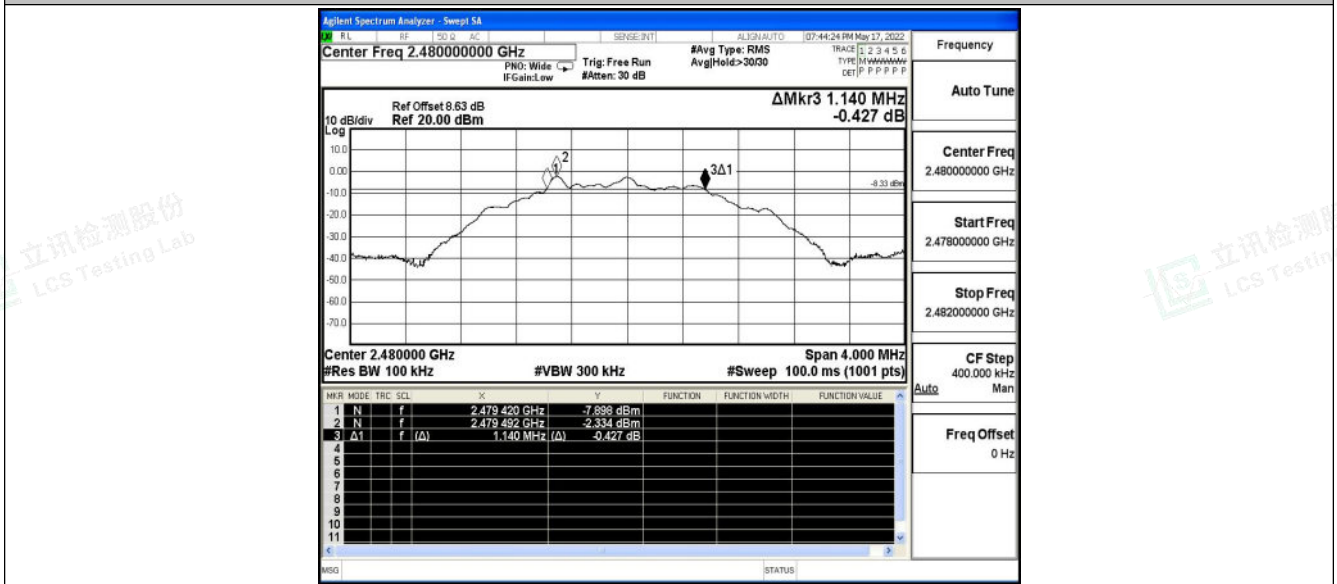


BLE_2M_Ant1_2440





BLE_2M_Ant1_2480





B.2 Occupied Channel Bandwidth

Test Result

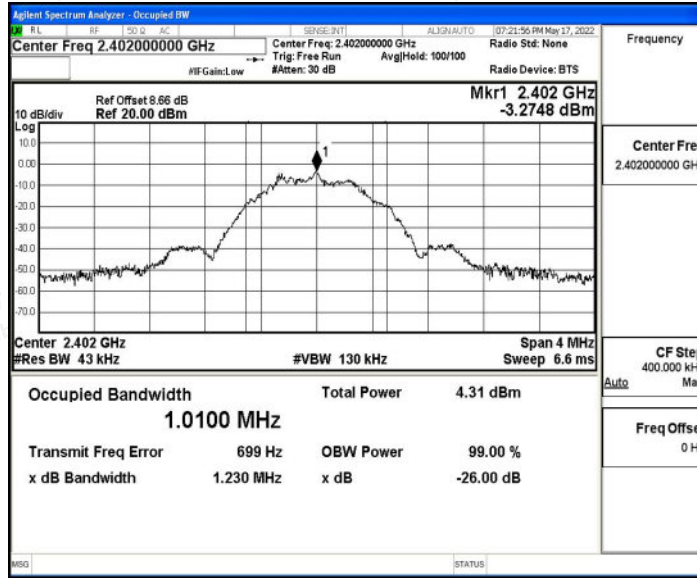
TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0100	2401.496	2402.506	---	---
		2440	1.0085	2439.497	2440.505	---	---
		2480	1.0086	2479.495	2480.503	---	---
BLE_2M	Ant1	2402	1.9735	2401.023	2402.996	---	---
		2440	1.9683	2439.026	2440.994	---	---
		2480	1.9786	2479.021	2481.000	---	---



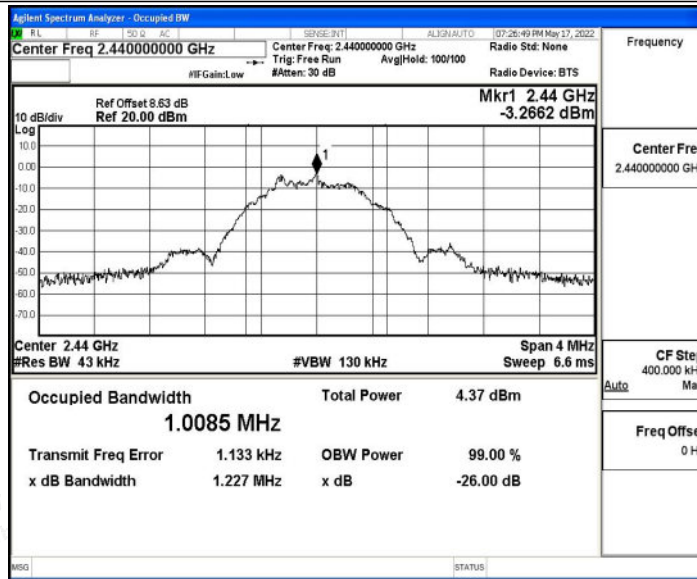


Test Graphs

BLE_1M_Ant1_2402

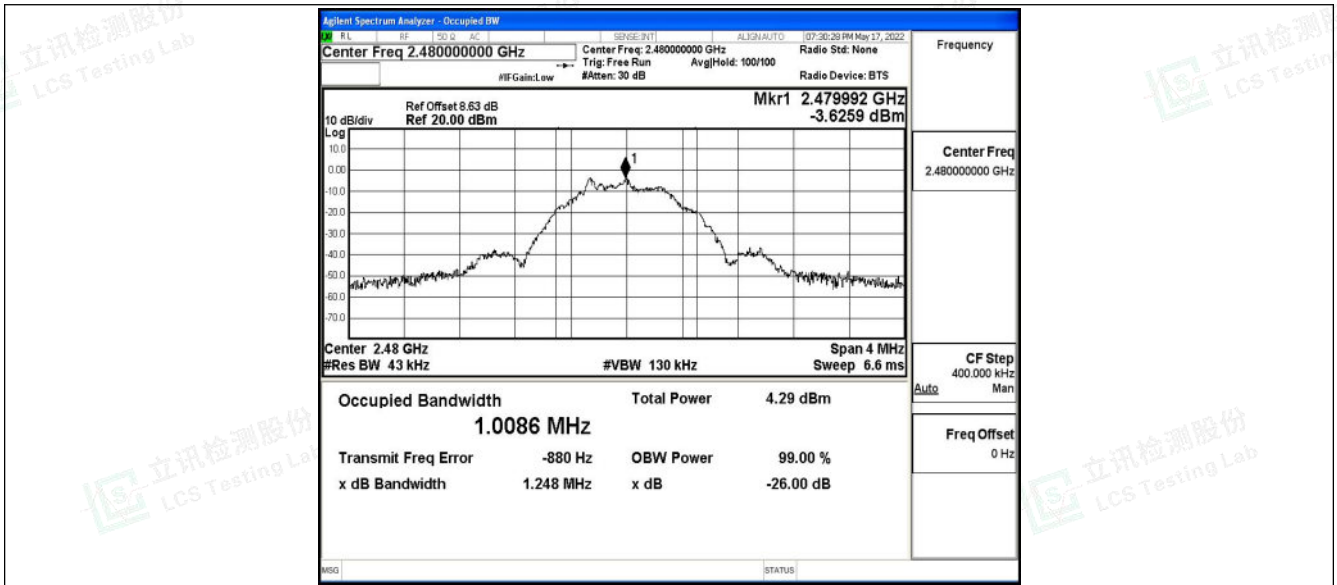


BLE_1M_Ant1_2440

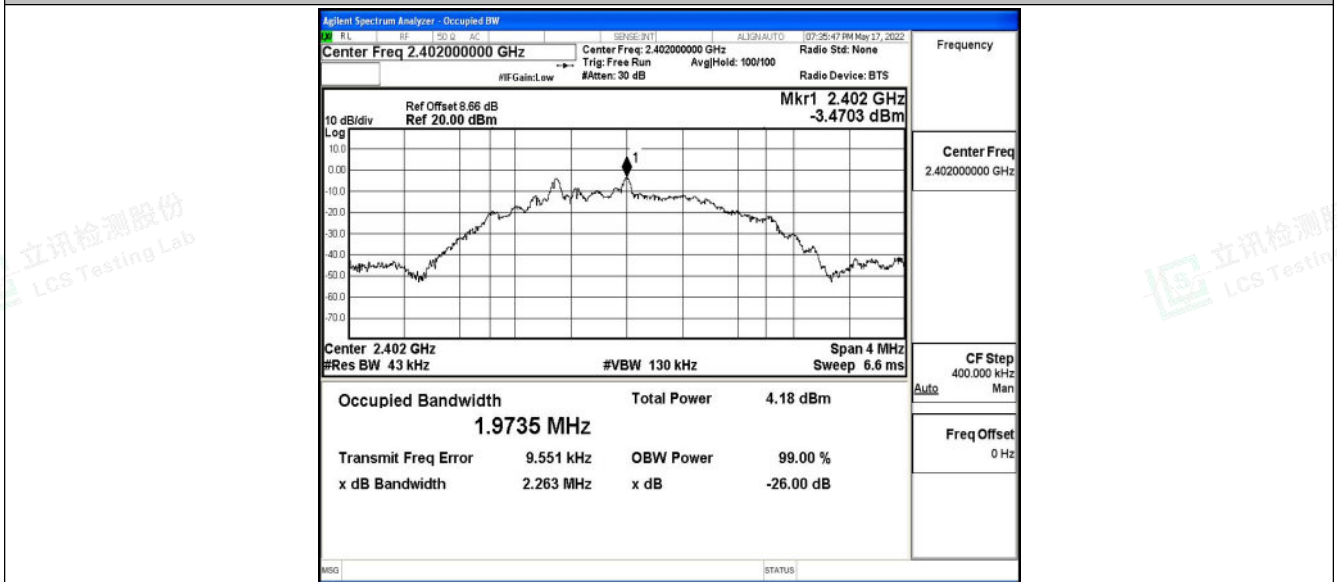


BLE_1M_Ant1_2480



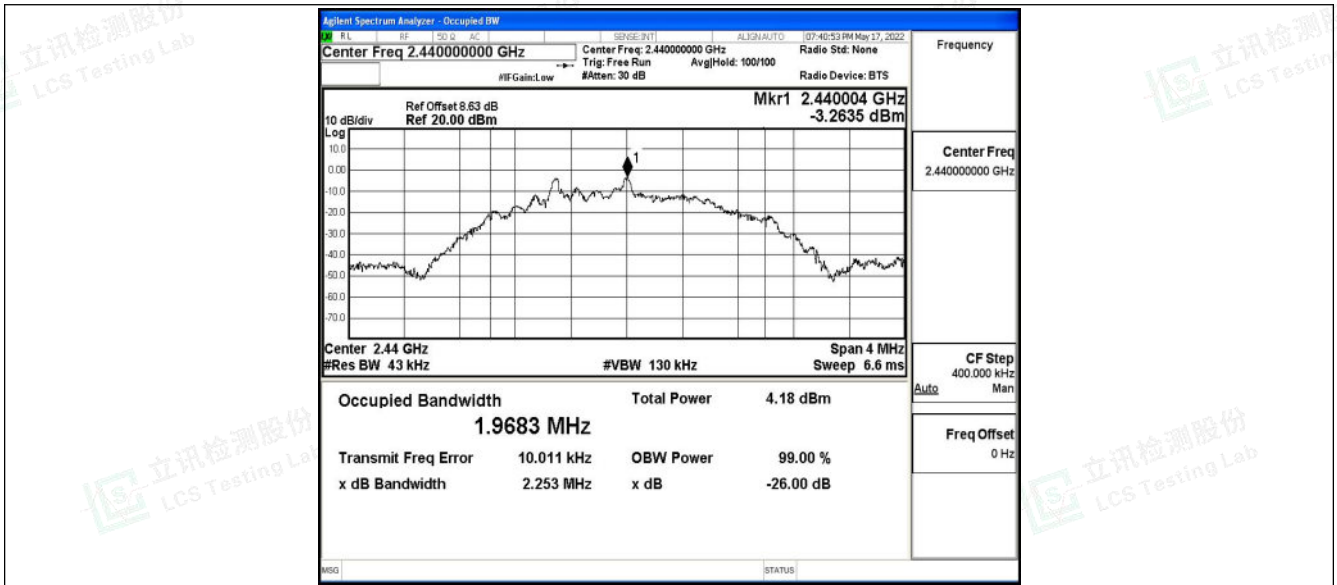


BLE_2M_Ant1_2402

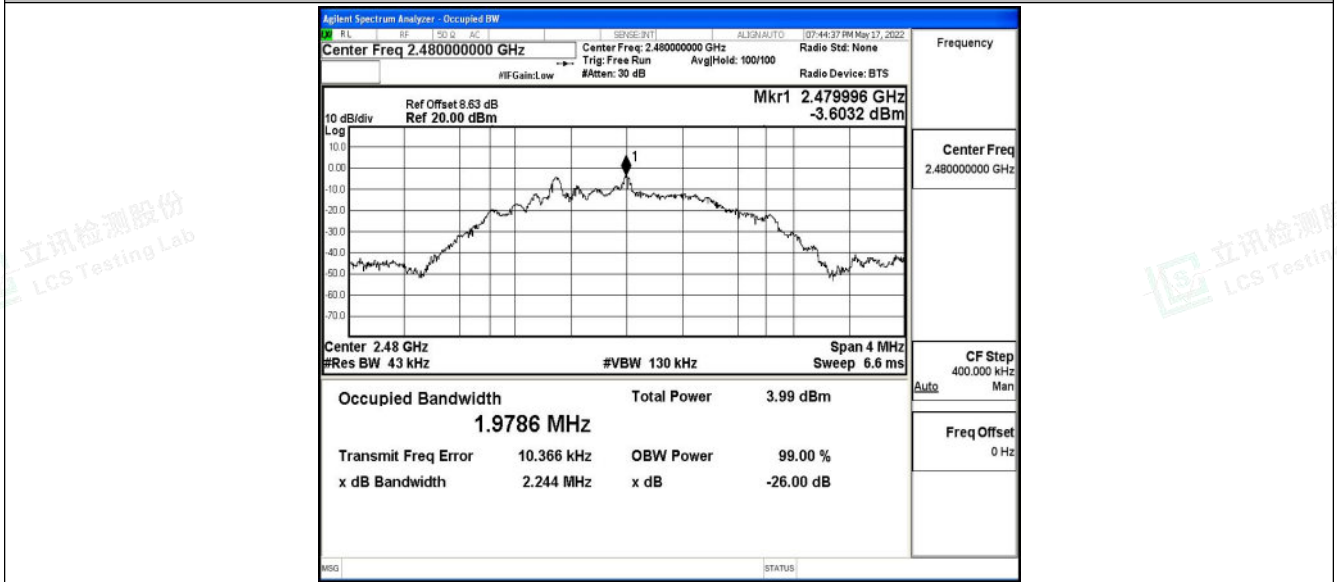


BLE_2M_Ant1_2440





BLE_2M_Ant1_2480





B.3 Maximum peak conducted output power

Test Result

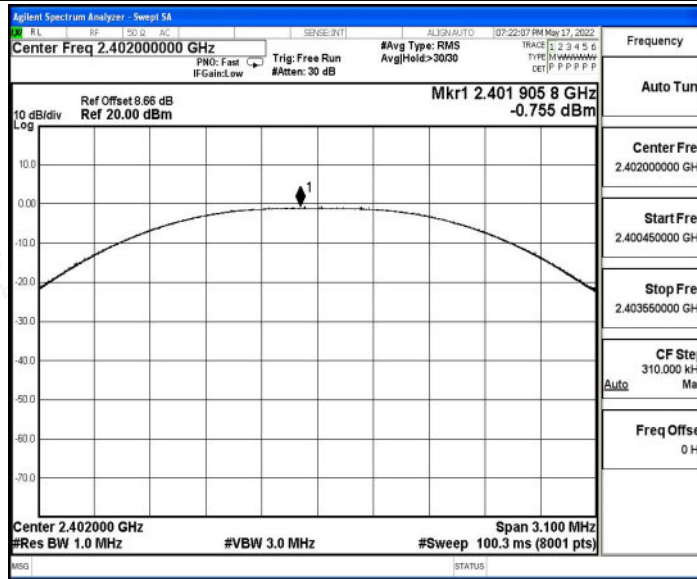
TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	-0.76	≤30	PASS
		2440	-0.75	≤30	PASS
		2480	-0.95	≤30	PASS
BLE_2M	Ant1	2402	-0.71	≤30	PASS
		2440	-0.6	≤30	PASS
		2480	-0.85	≤30	PASS



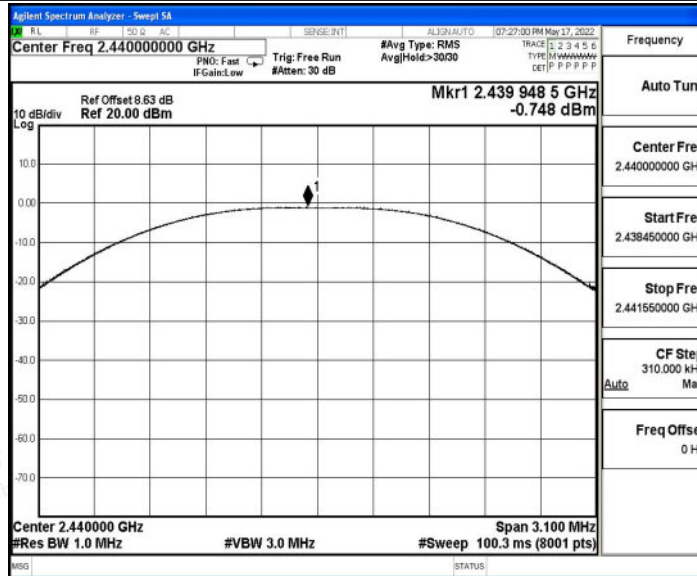


Test Graphs

BLE_1M_Ant1_2402

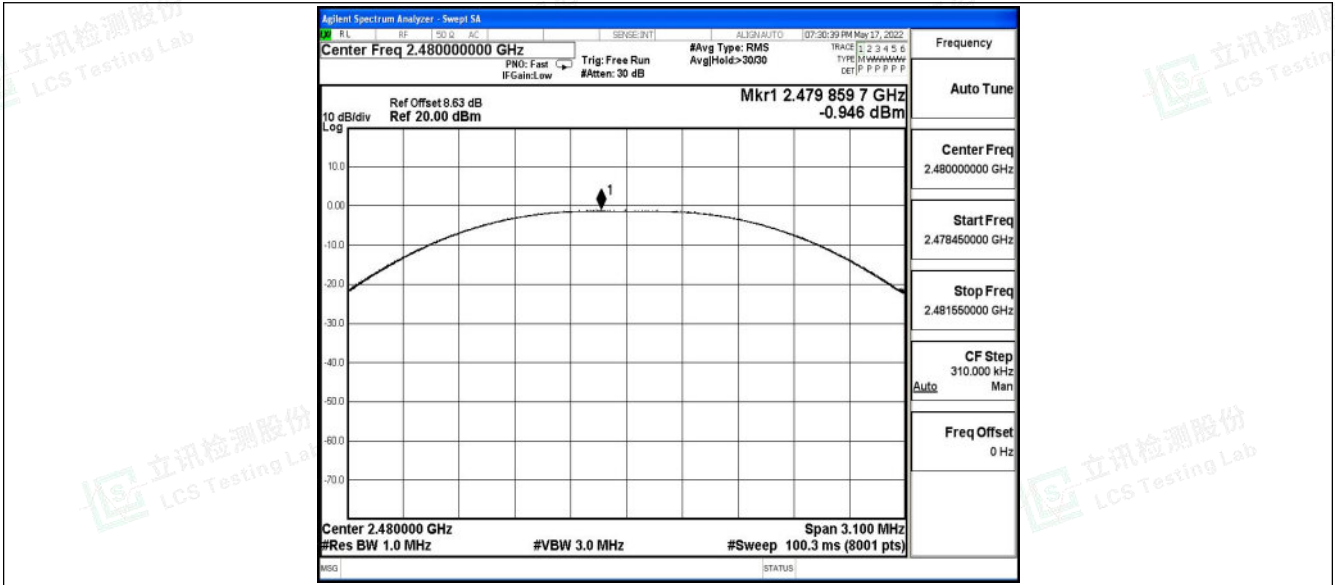


BLE_1M_Ant1_2440

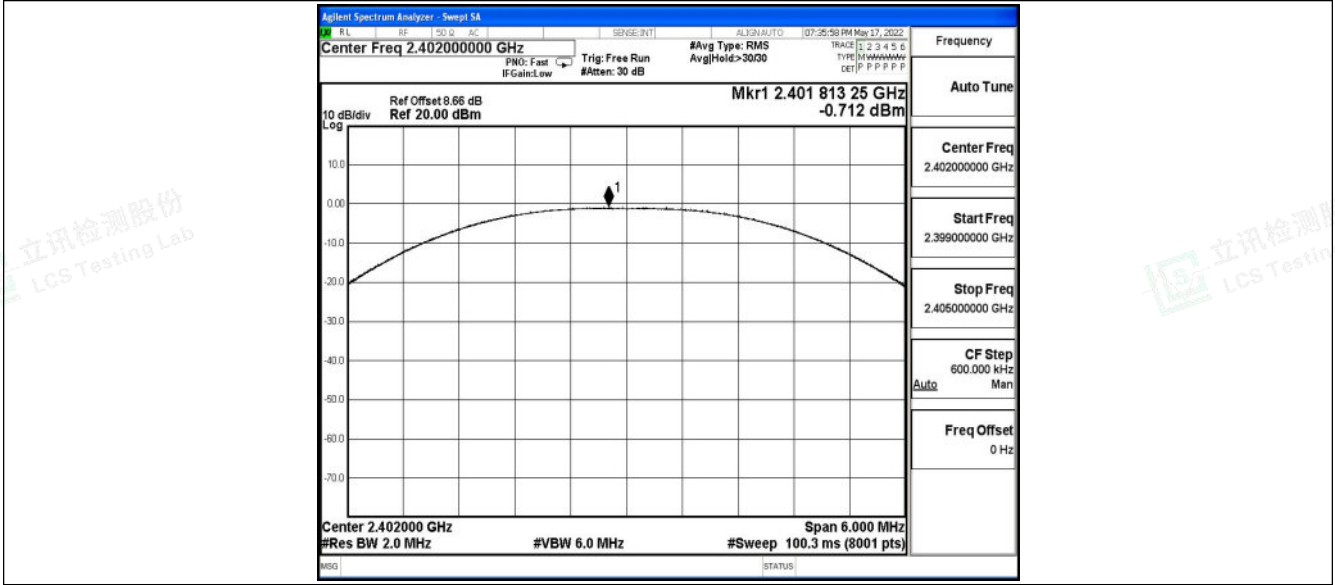


BLE_1M_Ant1_2480



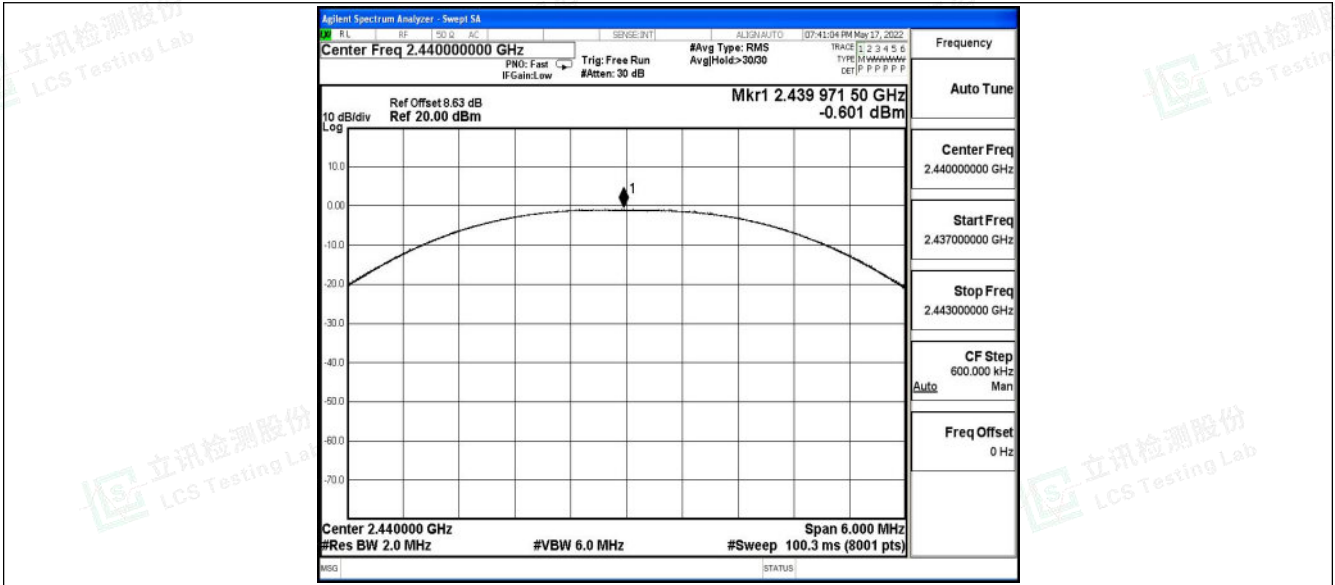


BLE_2M_Ant1_2402

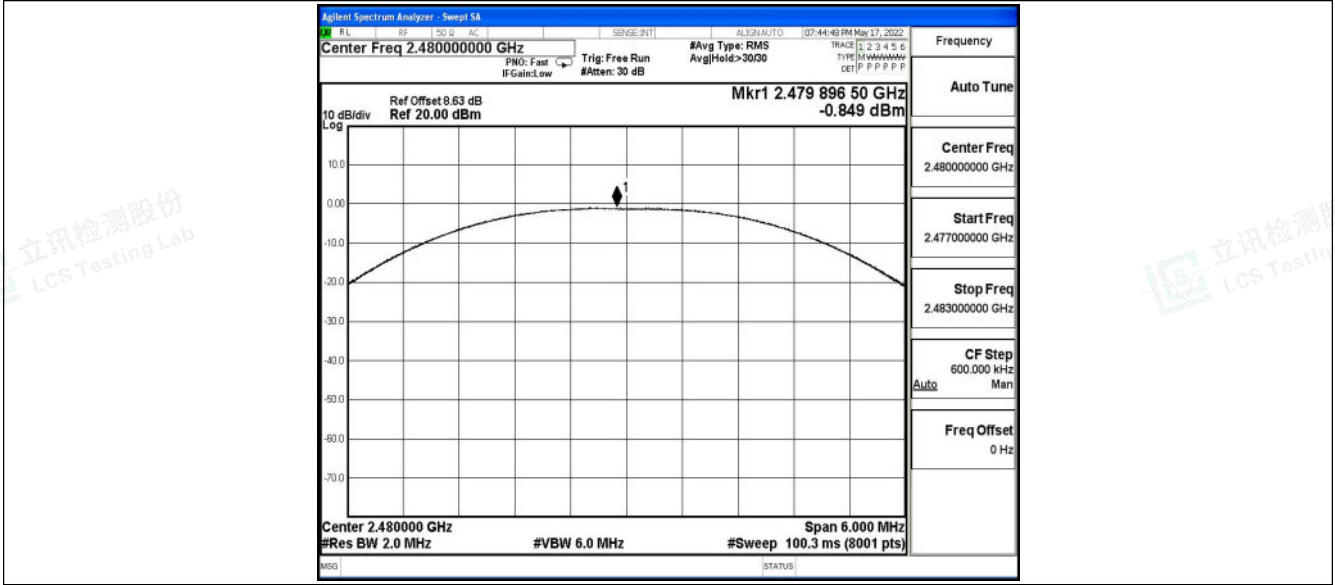


BLE_2M_Ant1_2440





BLE_2M_Ant1_2480





B.4 Maximum power spectral density

Test Result

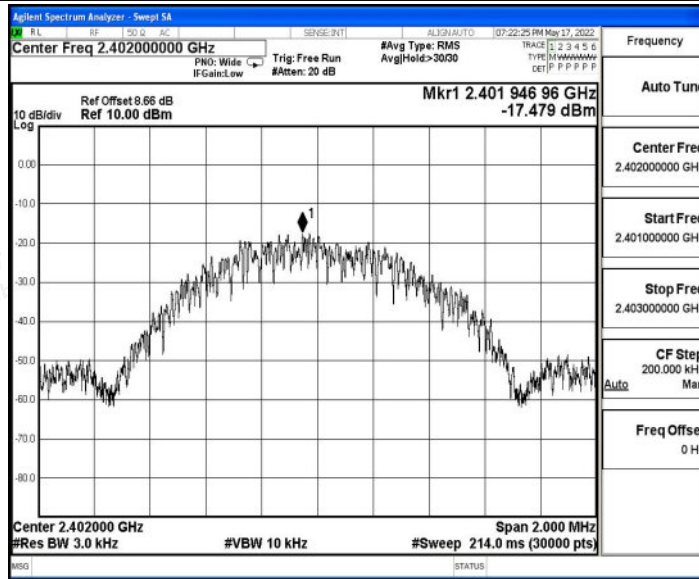
TestMode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-17.48	≤8.00	PASS
		2440	-17.35	≤8.00	PASS
		2480	-17.6	≤8.00	PASS
BLE_2M	Ant1	2402	-19.64	≤8.00	PASS
		2440	-19.79	≤8.00	PASS
		2480	-19.6	≤8.00	PASS



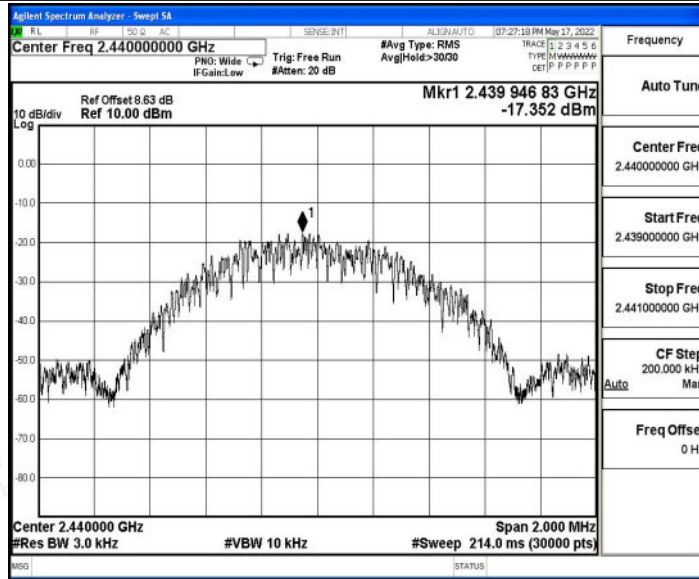


Test Graphs

BLE_1M_Ant1_2402

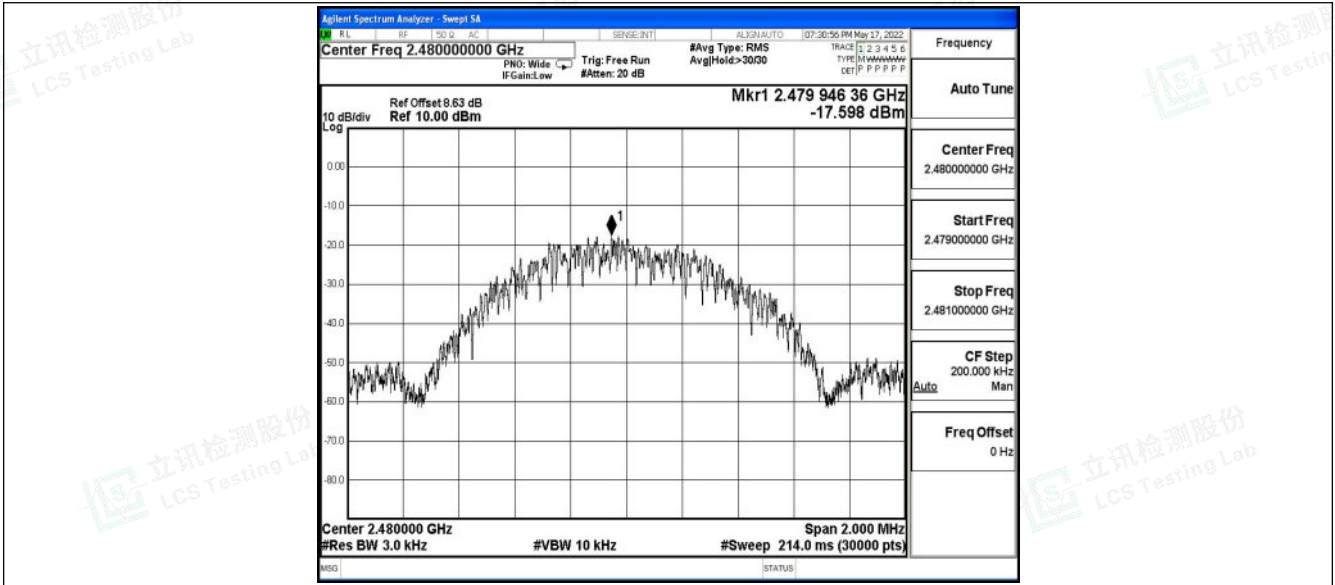


BLE_1M_Ant1_2440

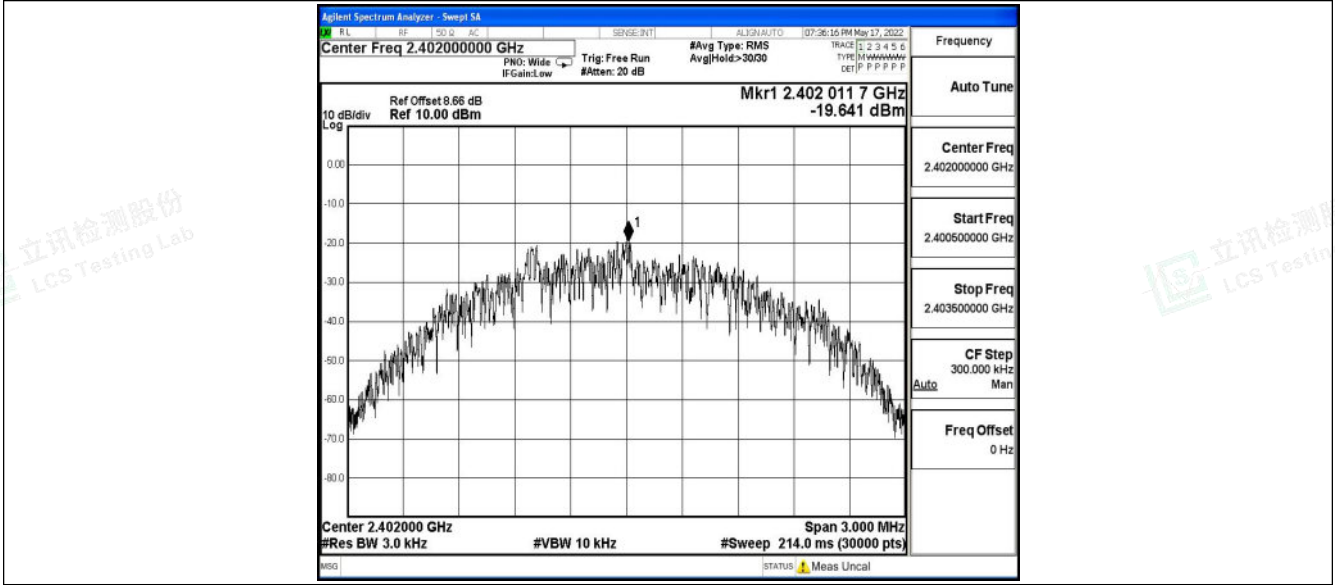


BLE_1M_Ant1_2480



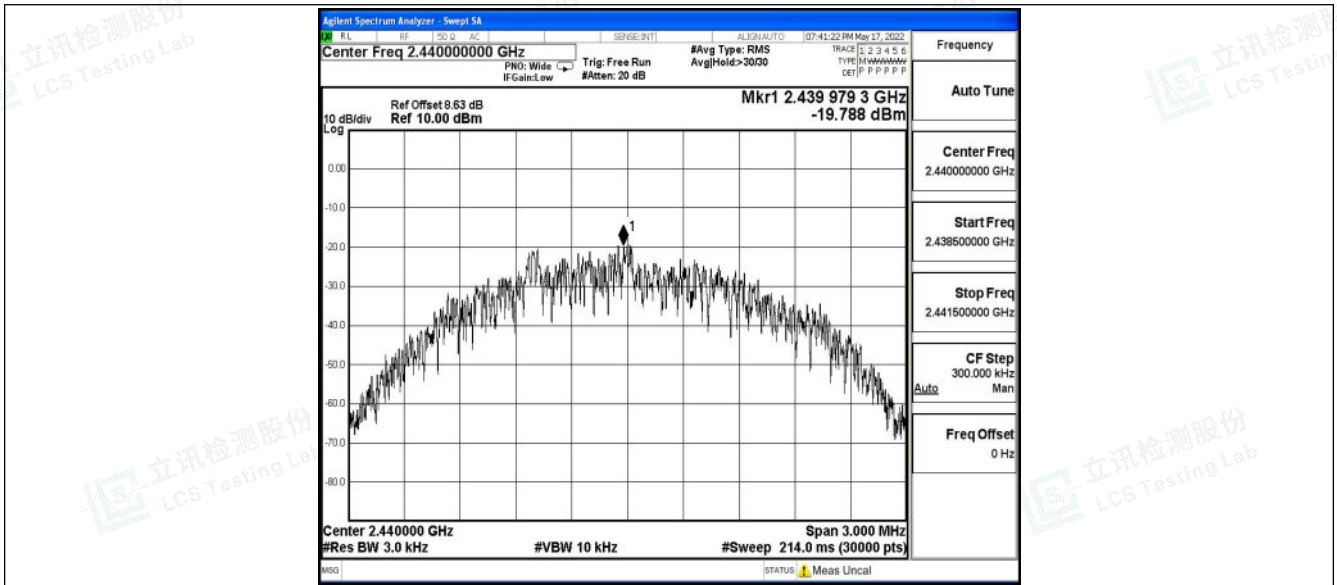


BLE_2M_Ant1_2402

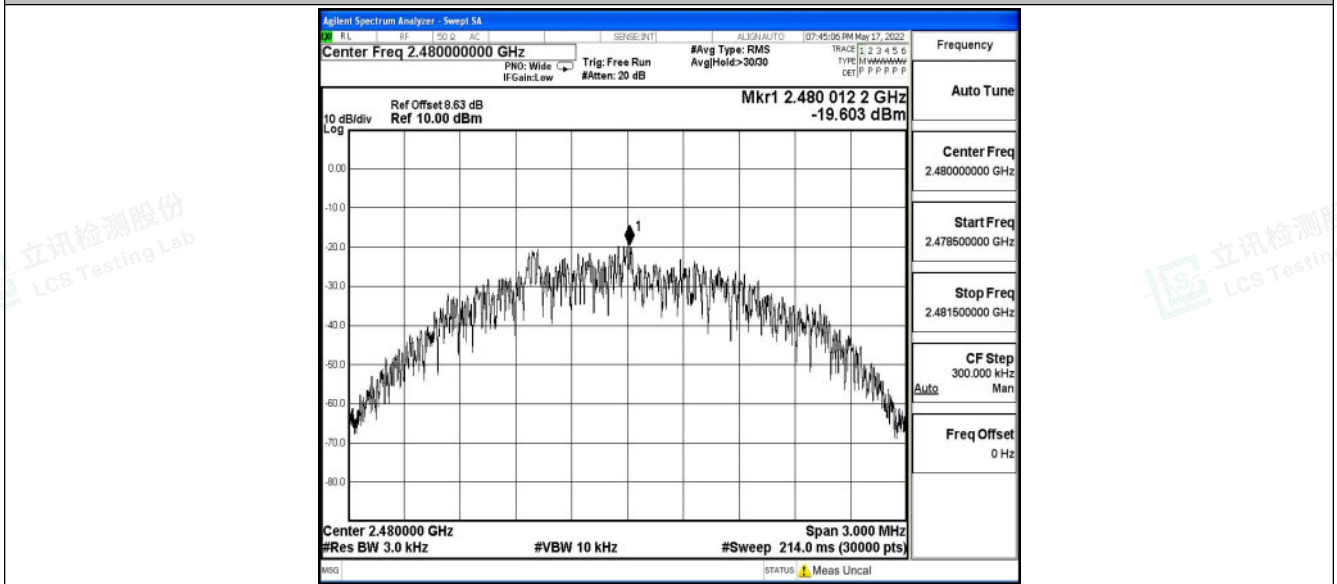


BLE_2M_Ant1_2440





BLE_2M_Ant1_2480





B.5 Band edge measurements

Test Result

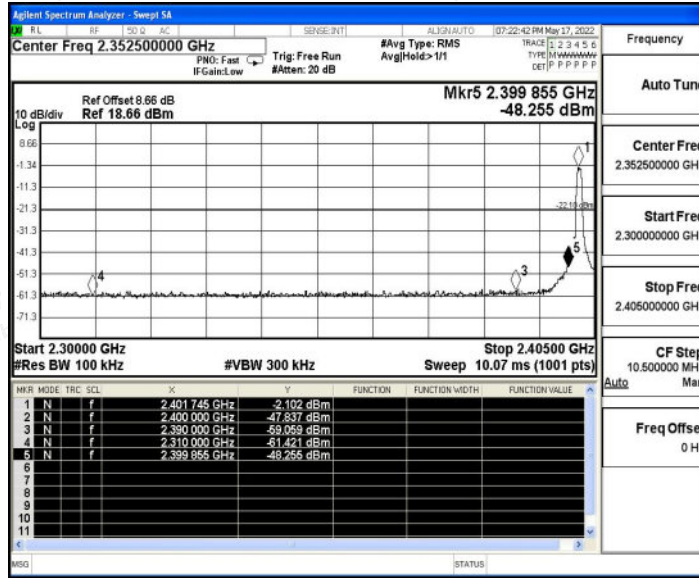
TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	-2.10	-48.26	≤-22.1	PASS
		High	2480	-2.14	-53.07	≤-22.14	PASS
BLE_2M	Ant1	Low	2402	-2.39	-38.06	≤-22.39	PASS
		High	2480	-2.40	-55.47	≤-22.4	PASS



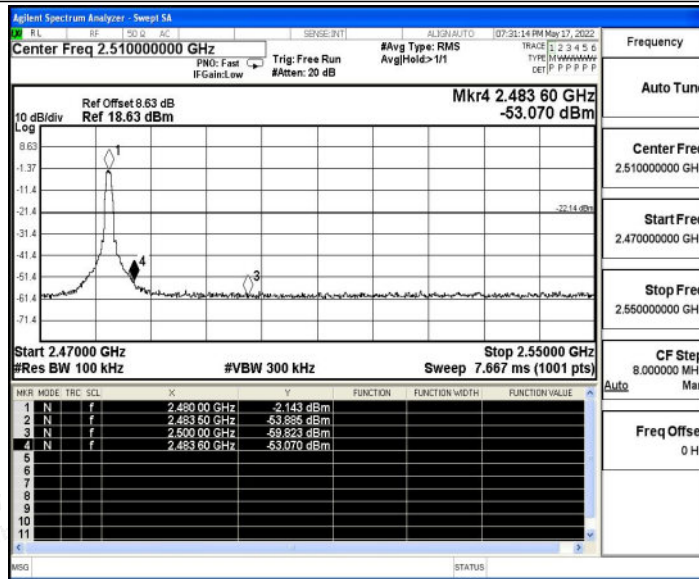


Test Graphs

BLE_1M_Ant1_Low_2402

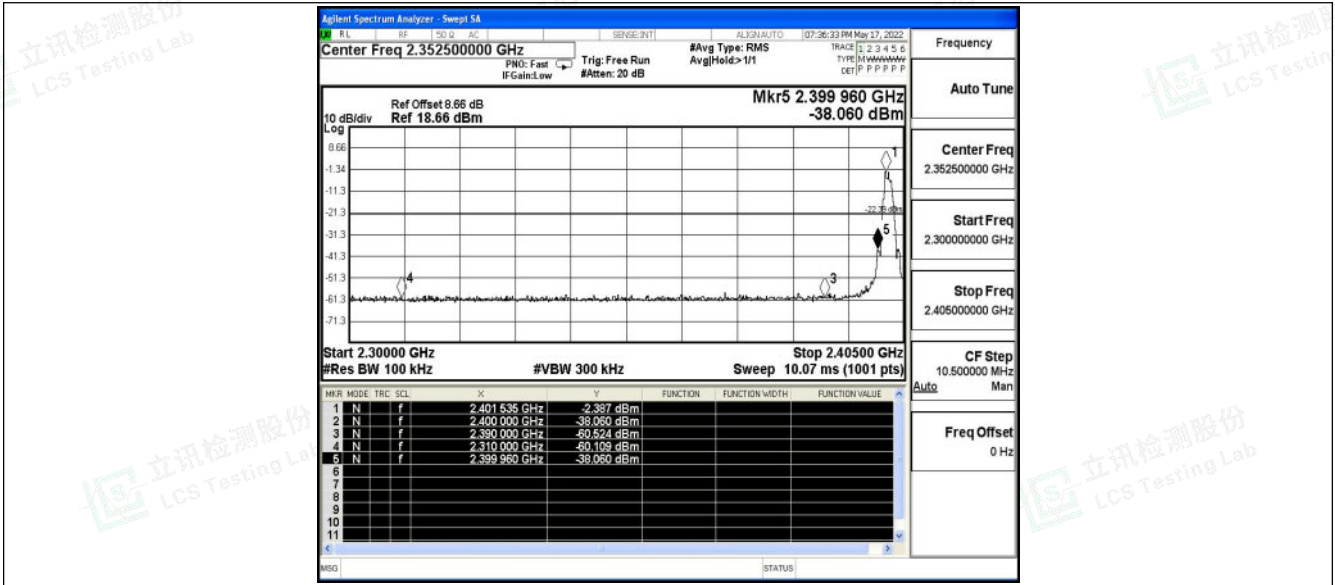


BLE_1M_Ant1_High_2480

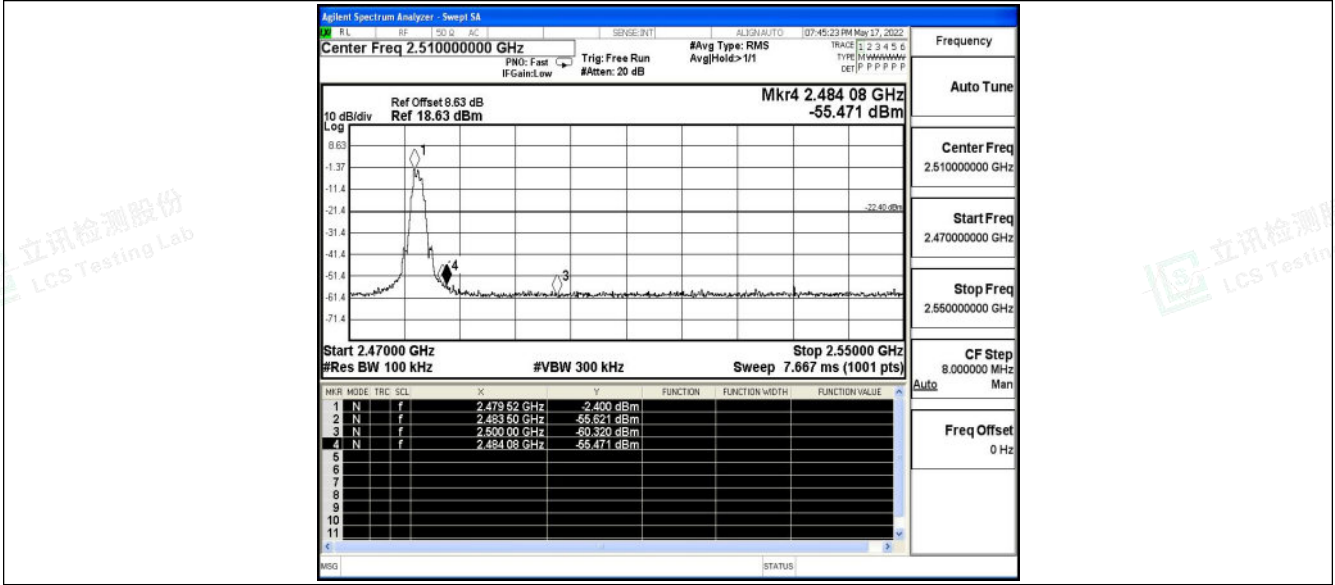


BLE_2M_Ant1_Low_2402





BLE_2M_Ant1_High_2480





B.6 Conducted Spurious Emission

Test Result

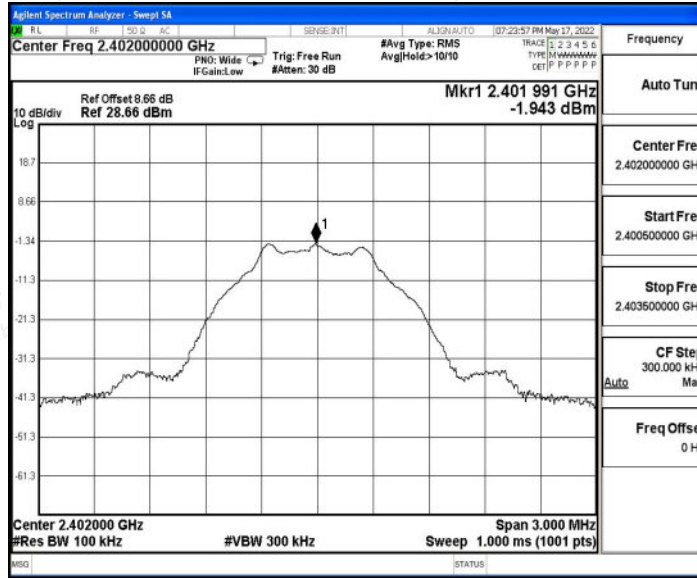
TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	-1.94	-1.94	---	PASS
			30~1000	-1.94	-54.09	≤-21.94	PASS
			1000~26500	-1.94	-38.57	≤-21.94	PASS
		2440	Reference	-2.13	-2.13	---	PASS
			30~1000	-2.13	-54.5	≤-22.13	PASS
			1000~26500	-2.13	-39.07	≤-22.13	PASS
		2480	Reference	-2.24	-2.24	---	PASS
			30~1000	-2.24	-55.57	≤-22.24	PASS
			1000~26500	-2.24	-40.49	≤-22.24	PASS
BLE_2M	Ant1	2402	Reference	-2.32	-2.32	---	PASS
			30~1000	-2.32	-54.35	≤-22.32	PASS
			1000~26500	-2.32	-39.59	≤-22.32	PASS
		2440	Reference	-2.27	-2.27	---	PASS
			30~1000	-2.27	-54.99	≤-22.27	PASS
			1000~26500	-2.27	-39.94	≤-22.27	PASS
		2480	Reference	-2.39	-2.39	---	PASS
			30~1000	-2.39	-53.95	≤-22.39	PASS
			1000~26500	-2.39	-39.75	≤-22.39	PASS



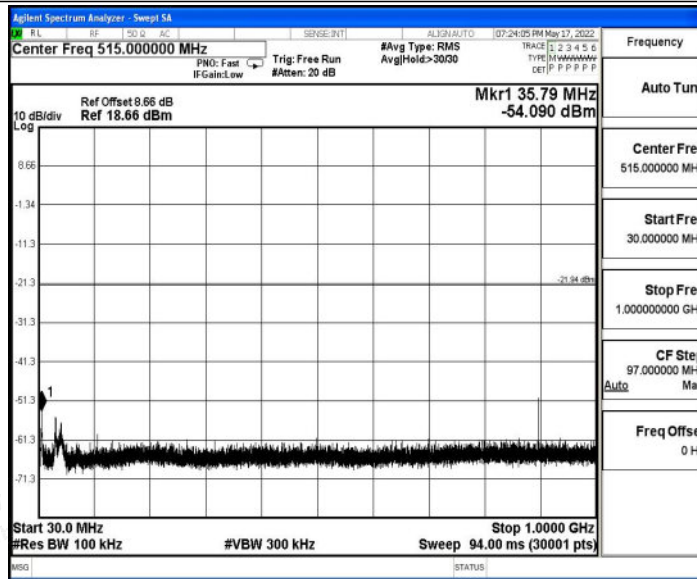


Test Graphs

BLE_1M_Ant1_2402_0~Reference

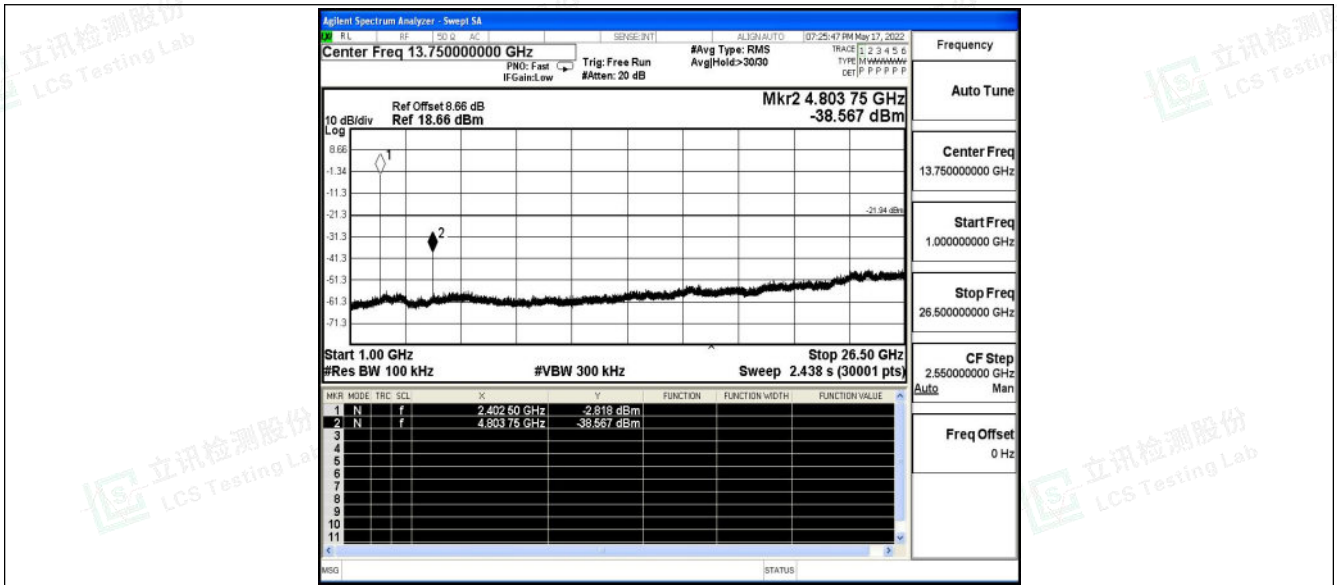


BLE_1M_Ant1_2402_30~1000

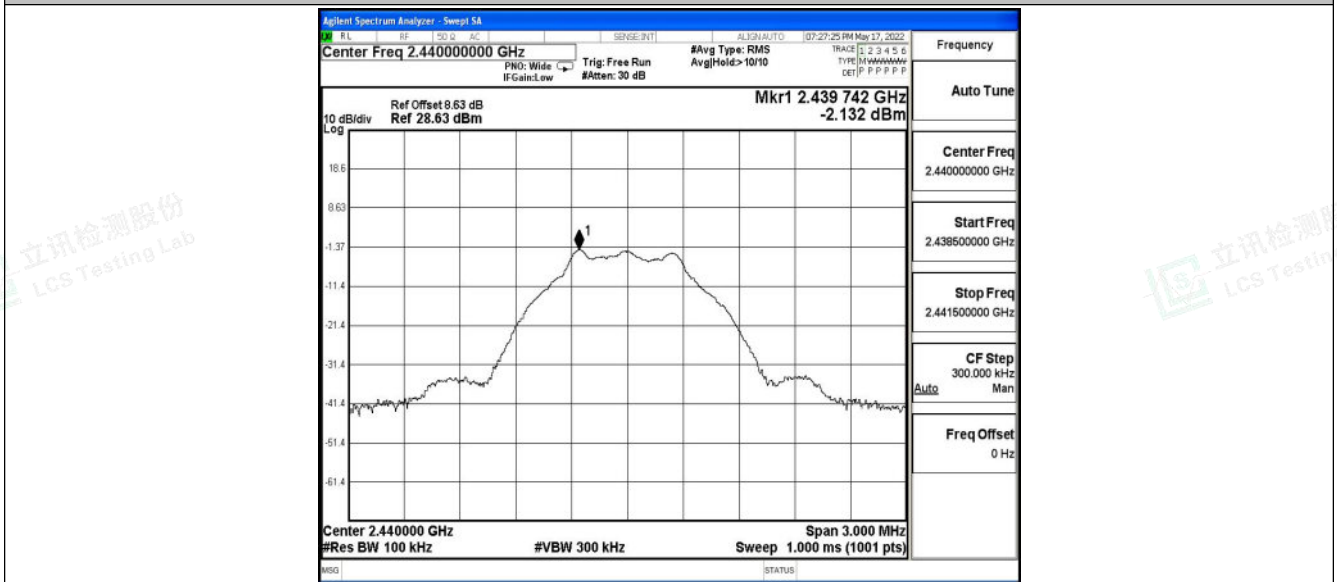


BLE_1M_Ant1_2402_1000~26500



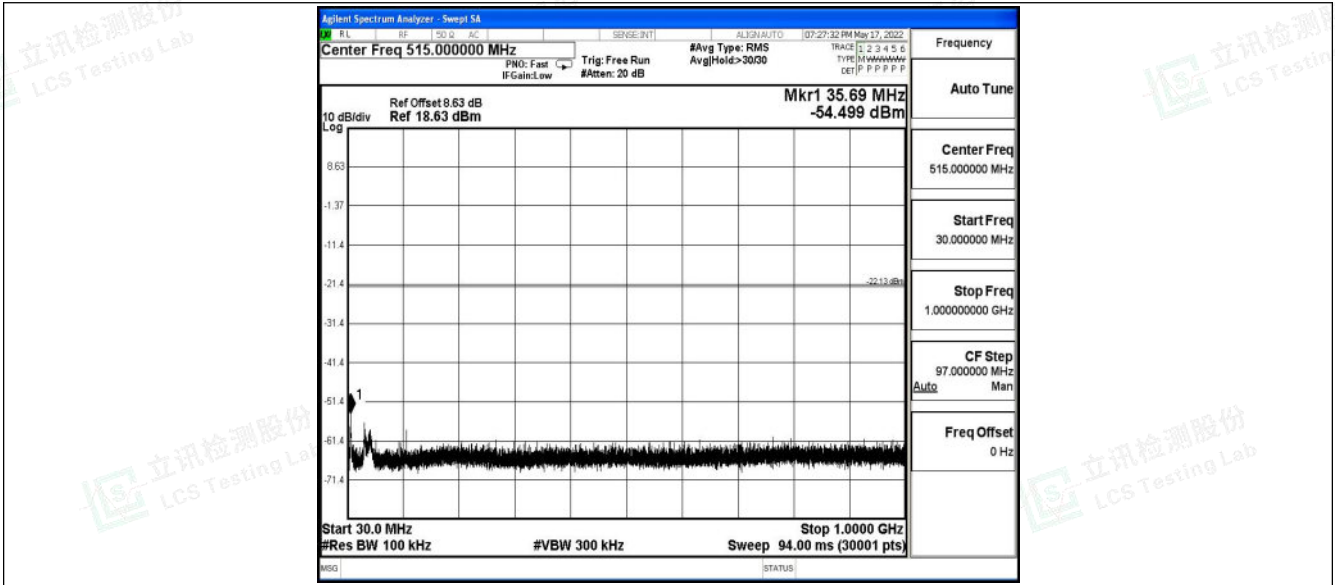


BLE_1M_Ant1_2440_0~Reference

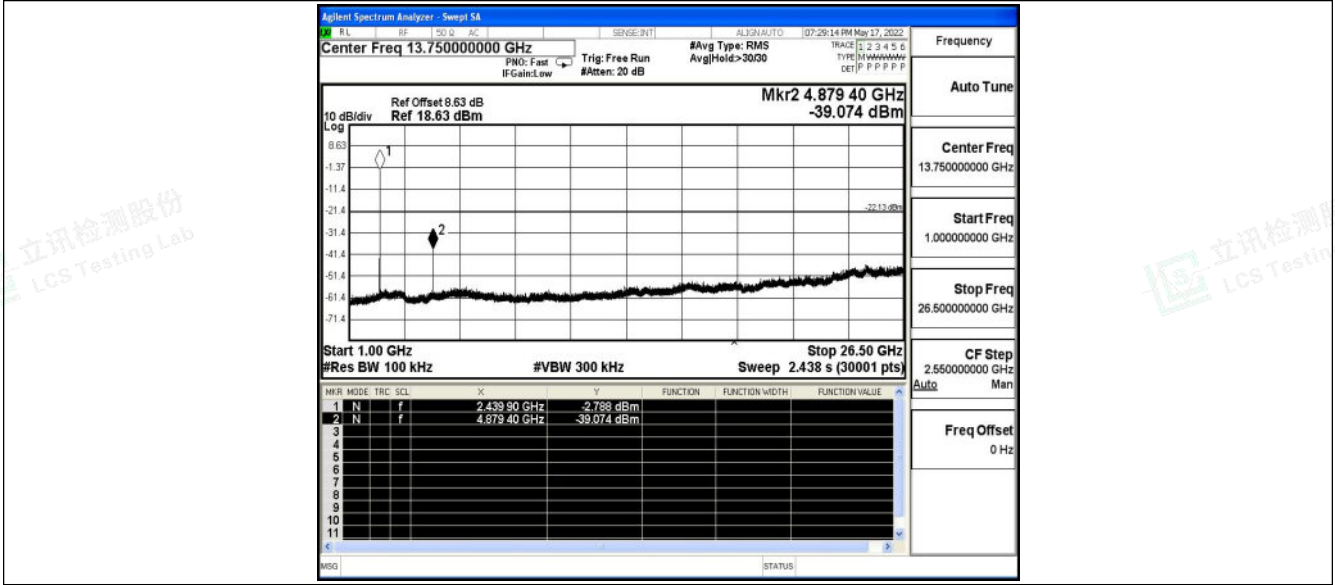


BLE_1M_Ant1_2440_30~1000



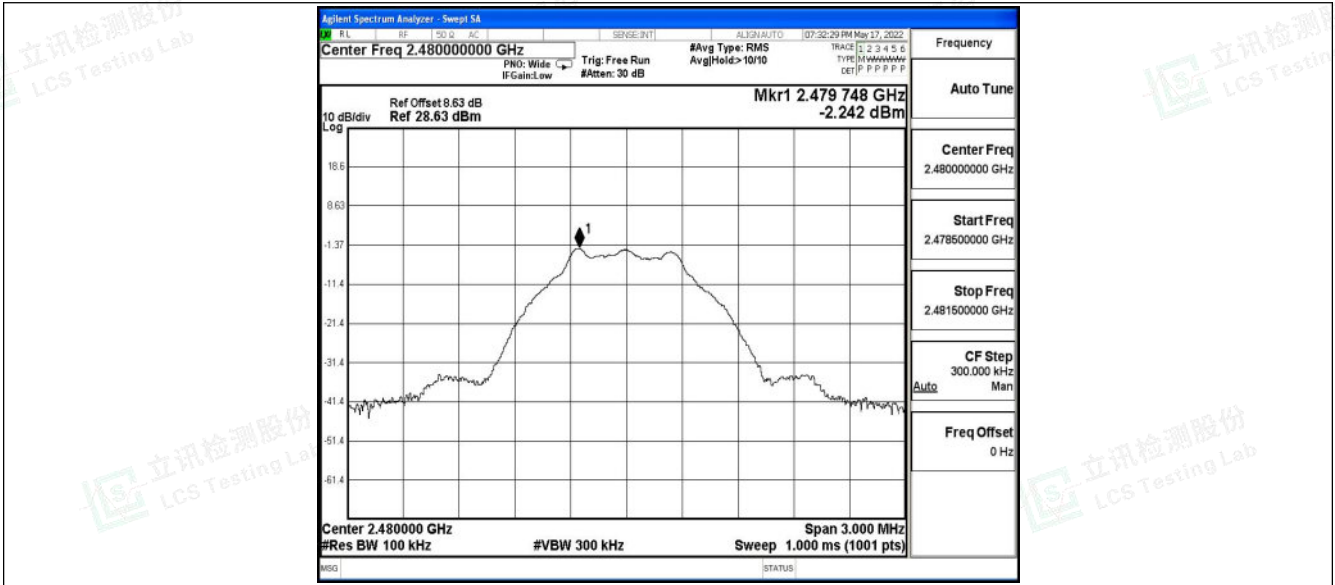


BLE_1M_Ant1_2440_1000~26500

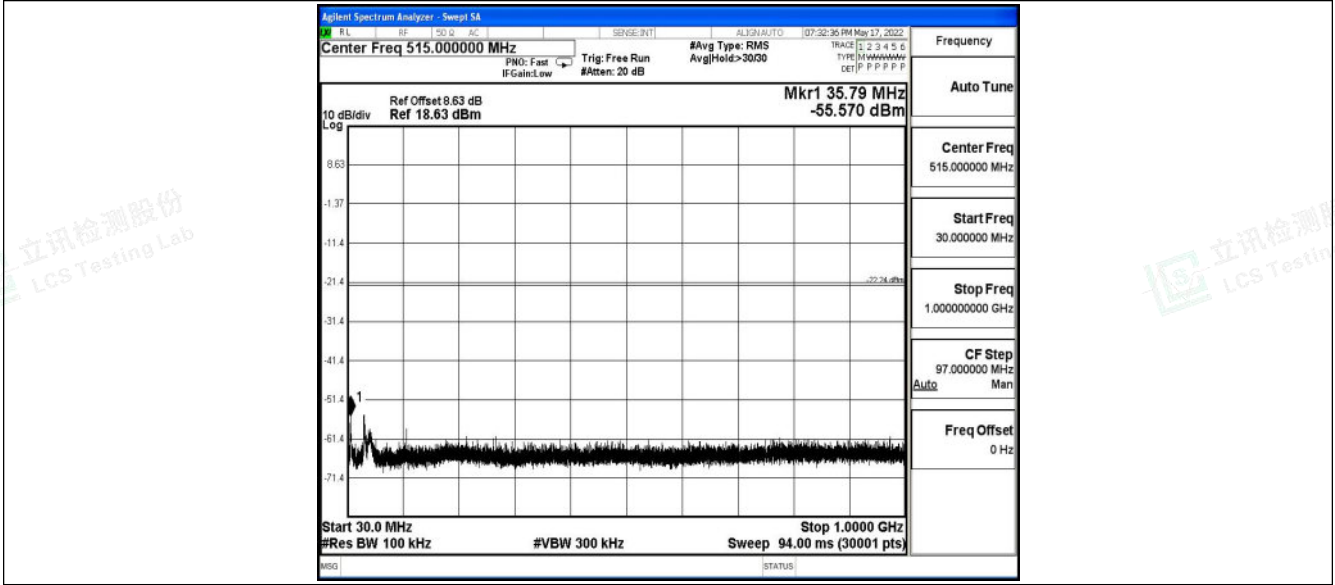


BLE_1M_Ant1_2480_0~Reference



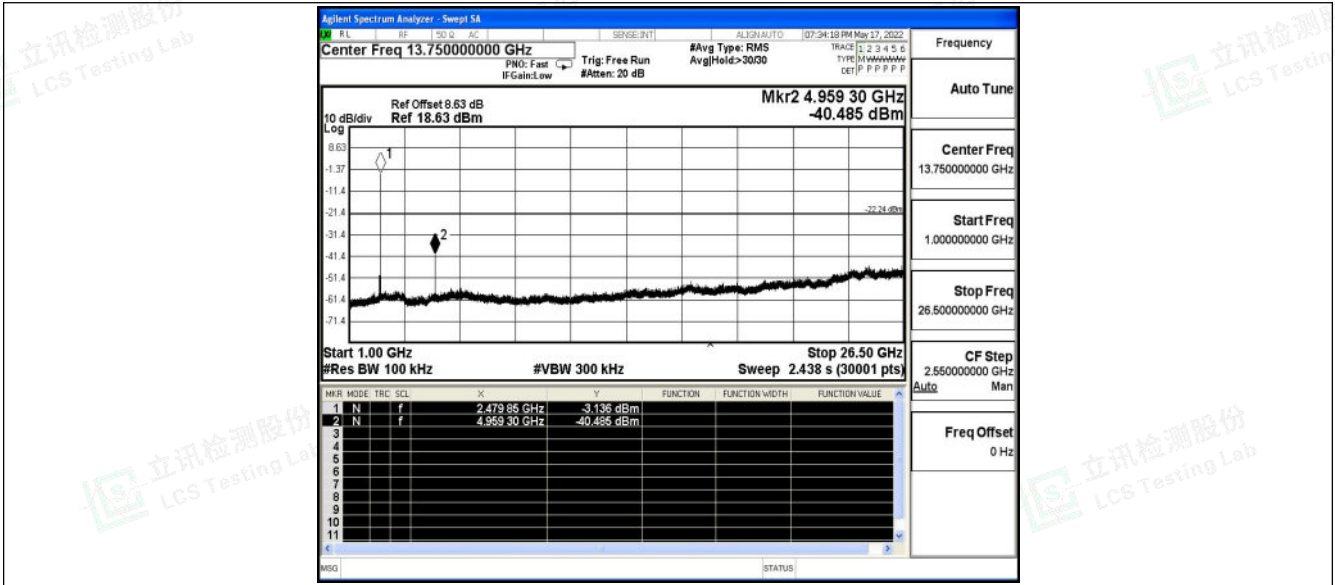


BLE_1M_Ant1_2480_30~1000

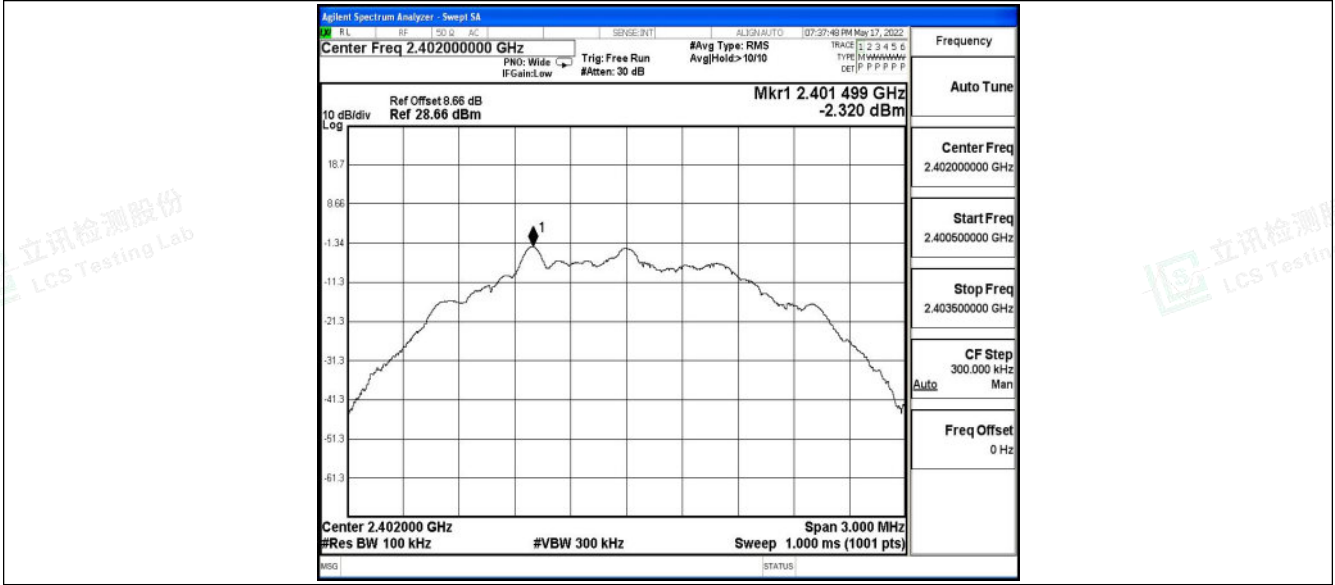


BLE_1M_Ant1_2480_1000~26500



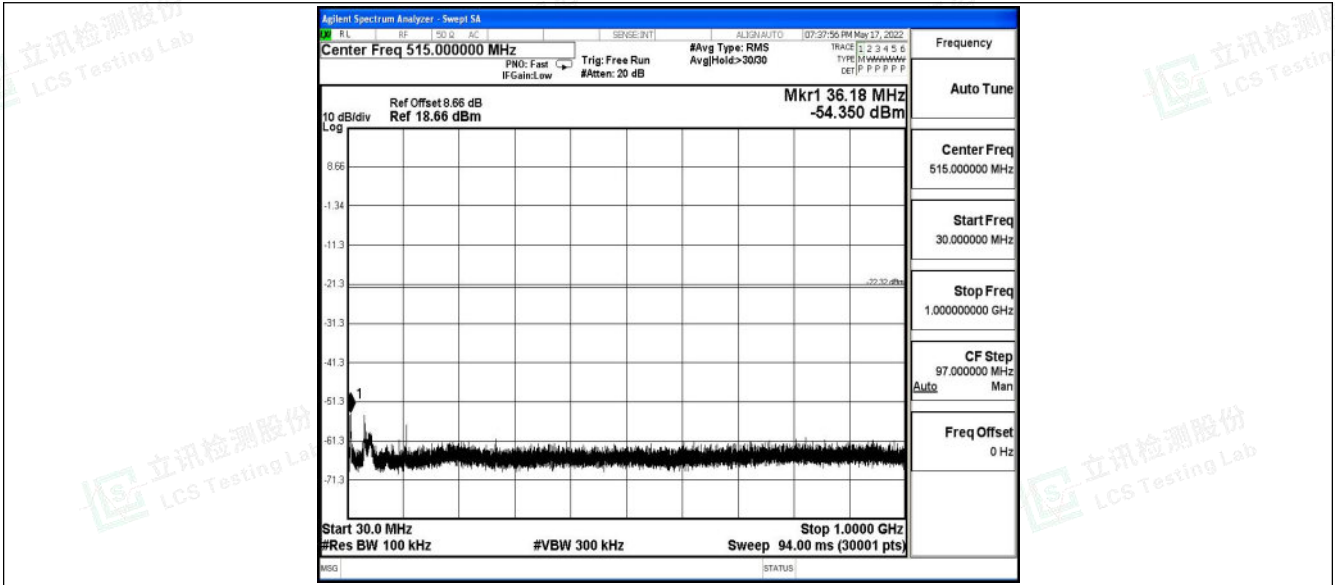


BLE_2M_Ant1_2402_0~Reference

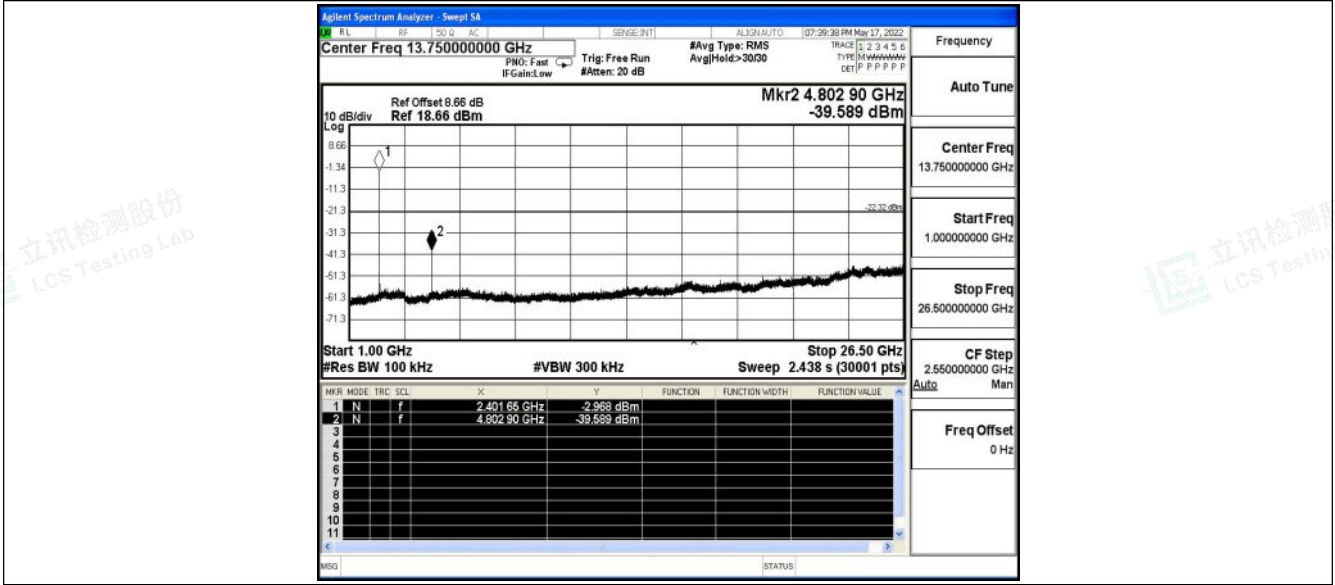


BLE_2M_Ant1_2402_30~1000



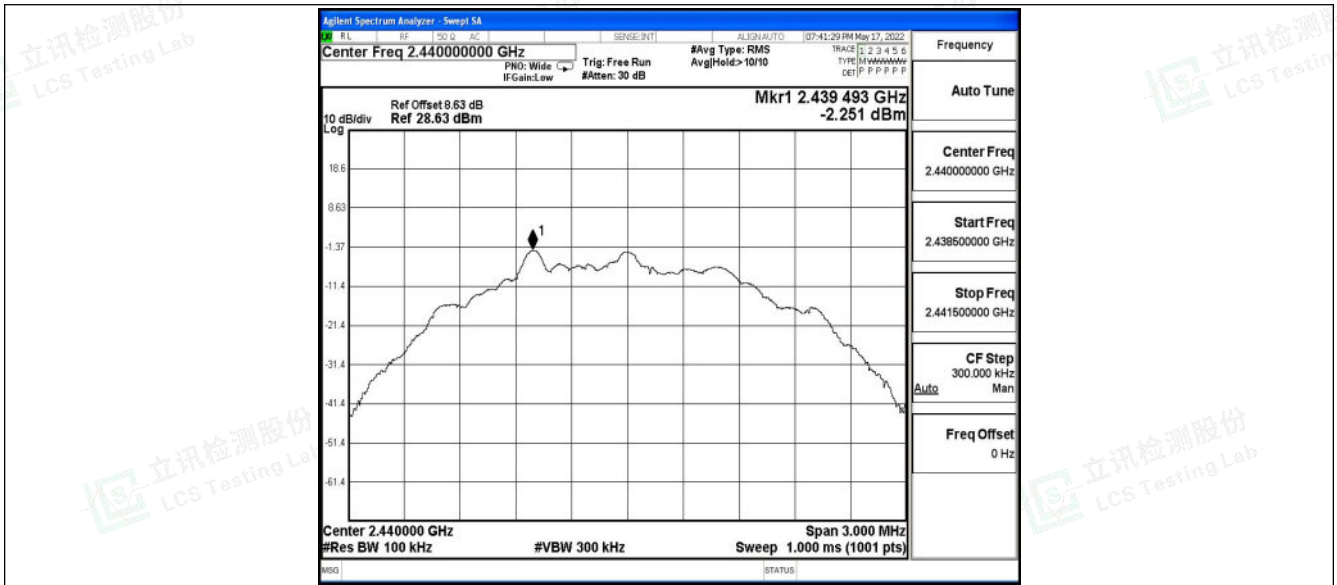


BLE_2M_Ant1_2402_1000~26500

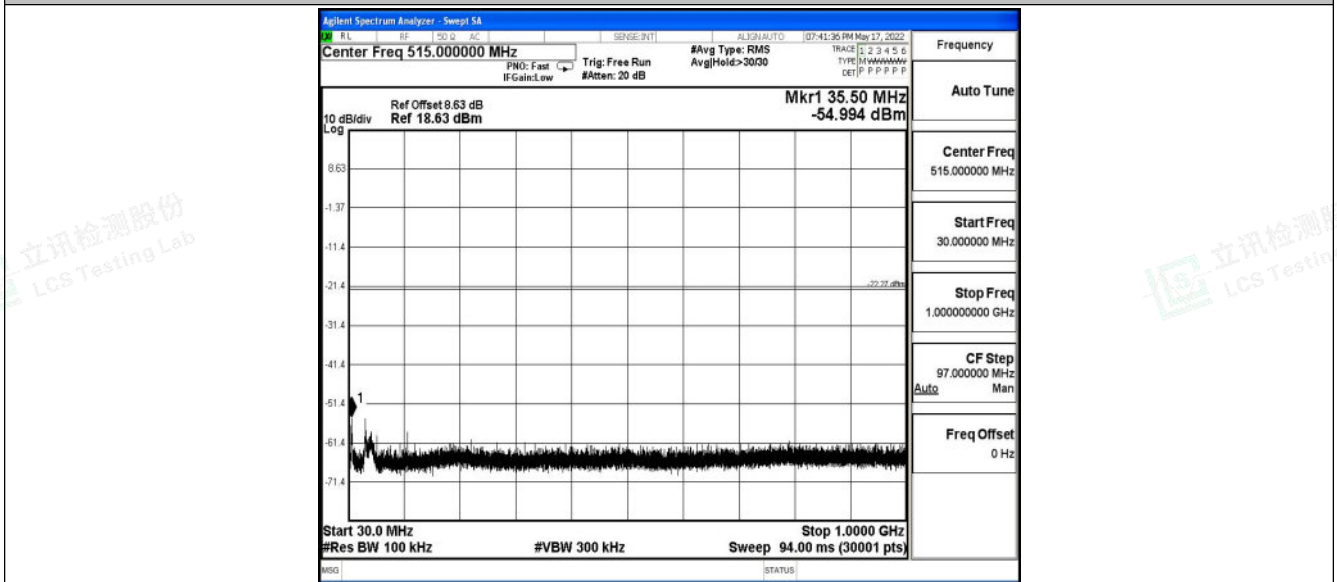


BLE_2M_Ant1_2440_0~Reference



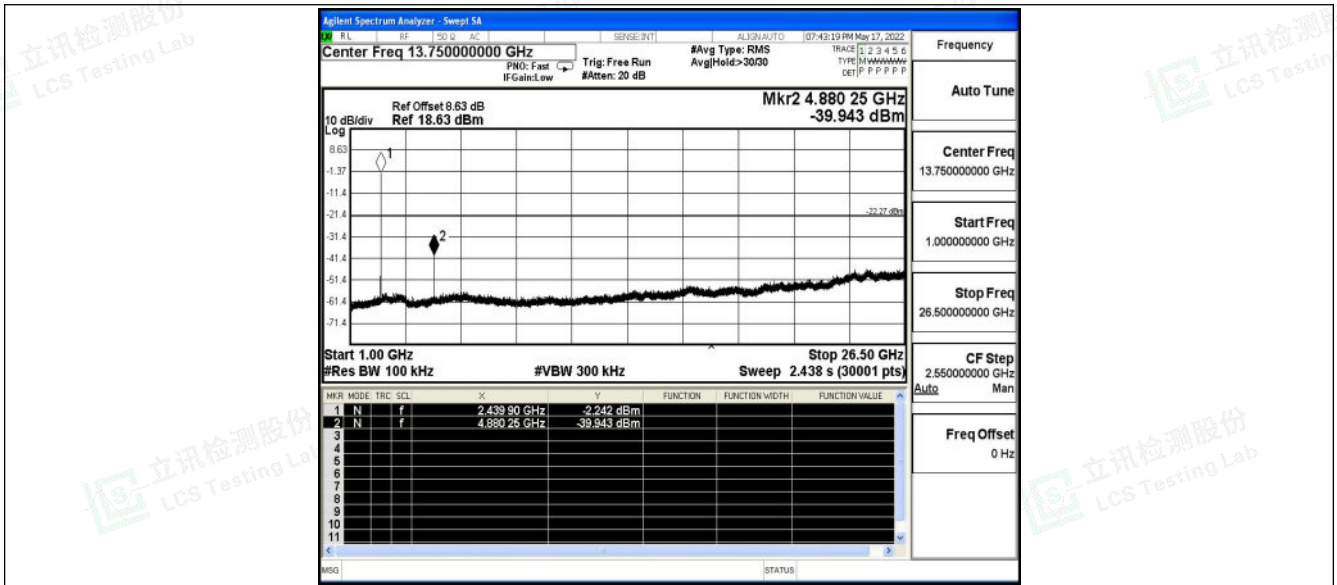


BLE_2M_Ant1_2440_30~1000

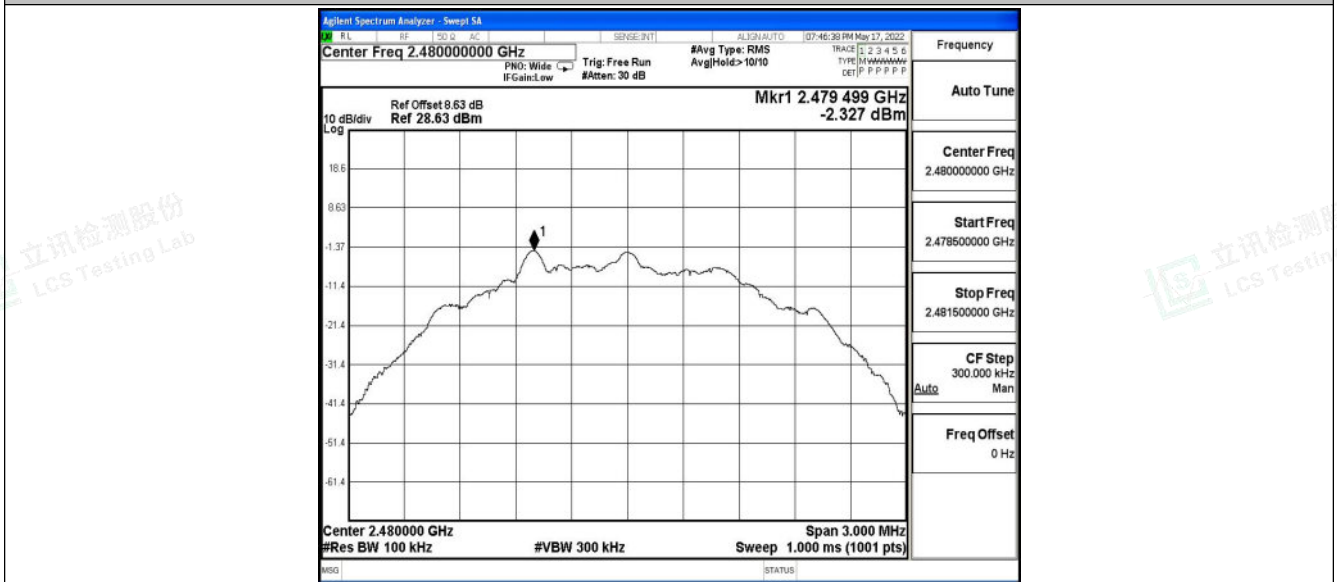


BLE_2M_Ant1_2440_1000~26500



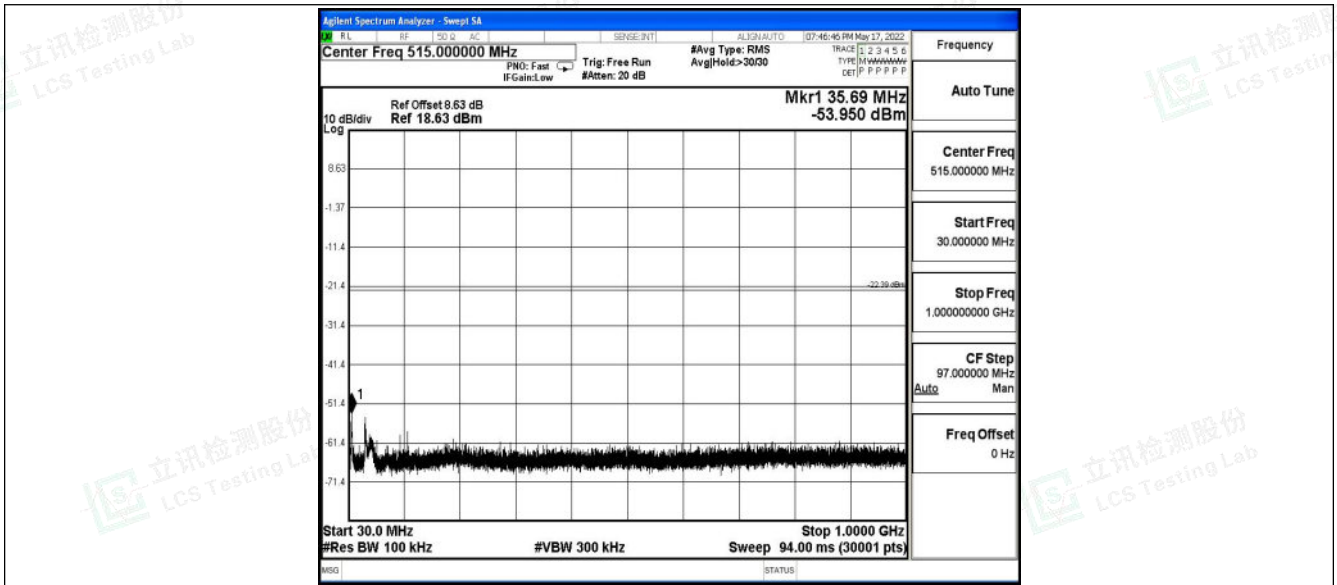


BLE_2M_Ant1_2480_0~Reference

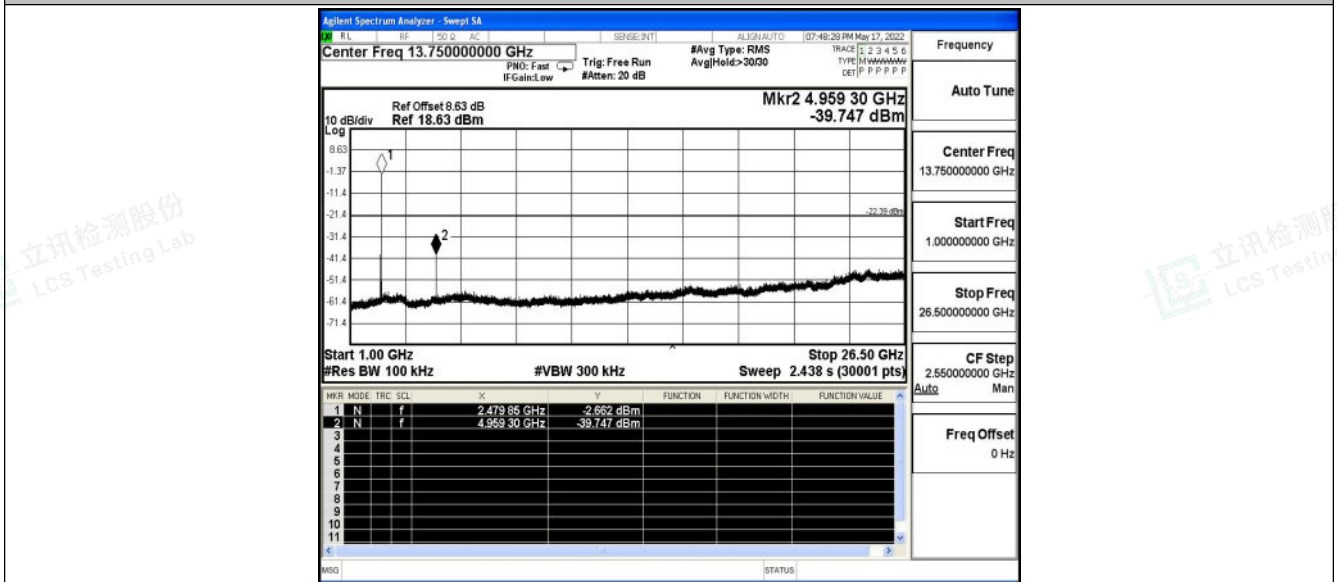


BLE_2M_Ant1_2480_30~1000





BLE_2M_Ant1_2480_1000~26500





B.7 Duty Cycle

Test Result

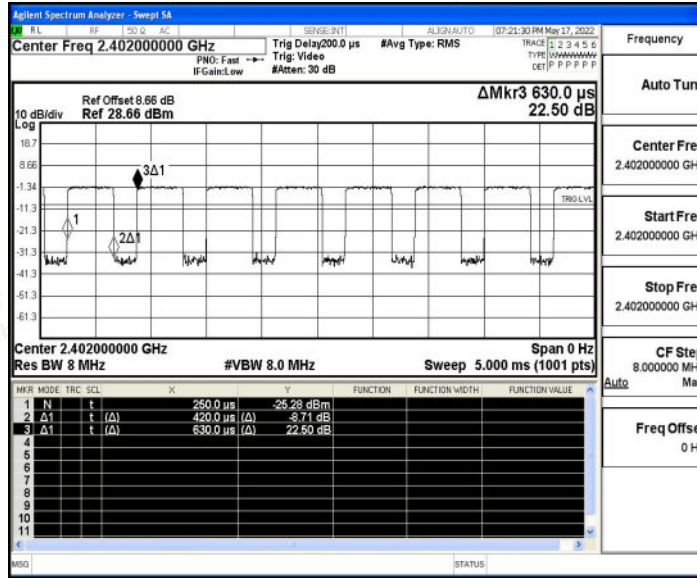
TestMode	Antenna	Channel	ON Time [ms]	Period [ms]	X	DC [%]	xFactor	Limit	Verdict
BLE_1M	Ant1	2402	0.42	0.63	0.6667	66.67	1.76	---	---
		2440	0.42	0.63	0.6667	66.67	1.76	---	---
		2480	0.41	0.62	0.6613	66.13	1.80	---	---
BLE_2M	Ant1	2402	0.23	0.62	0.3710	37.10	4.31	---	---
		2440	0.23	0.62	0.3710	37.10	4.31	---	---
		2480	0.23	0.63	0.3651	36.51	4.38	---	---



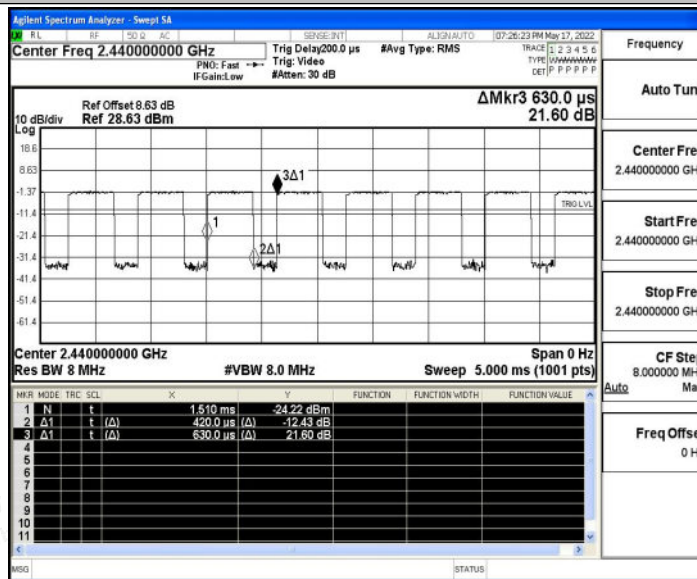


Test Graphs

BLE_1M_Ant1_2402

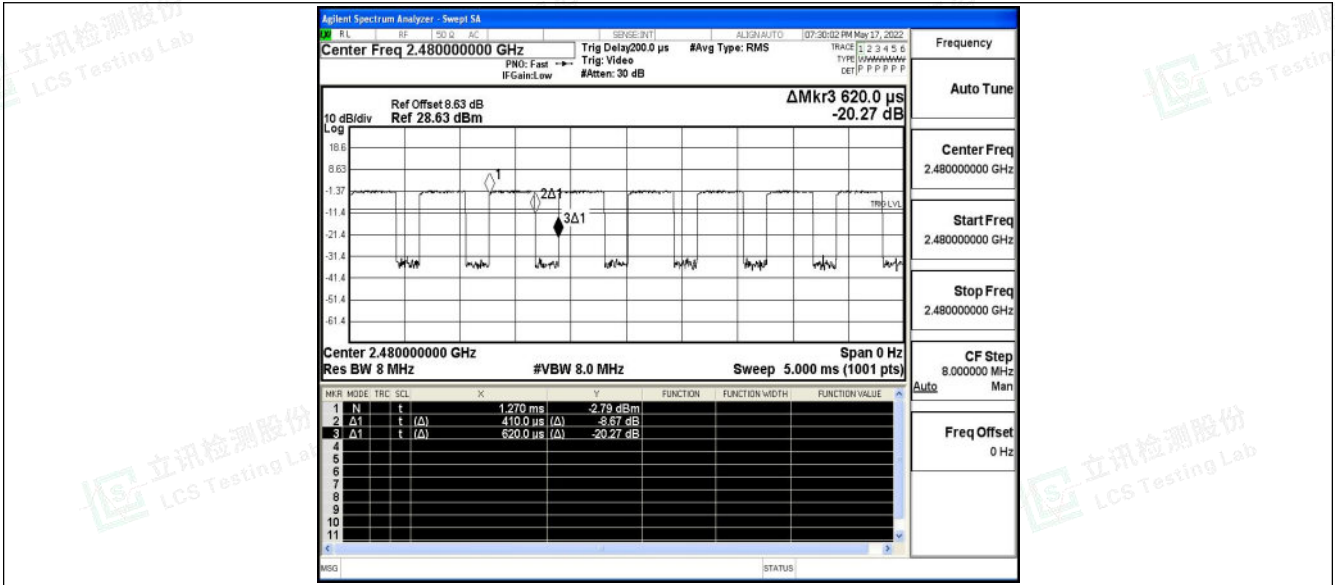


BLE_1M_Ant1_2440

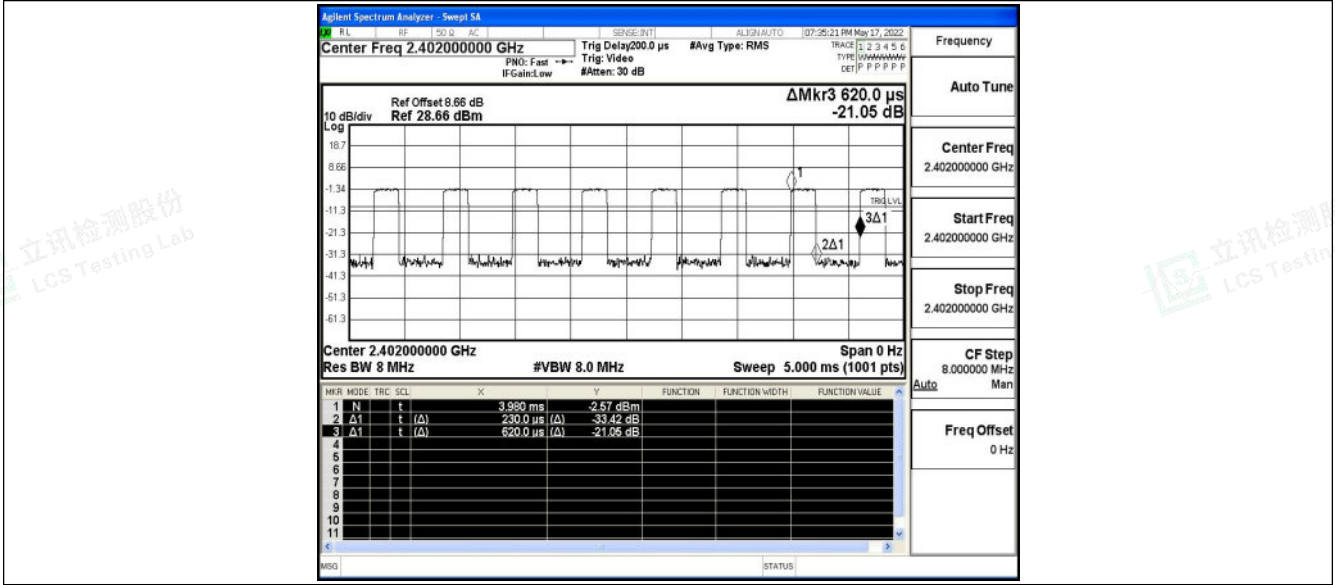


BLE_1M_Ant1_2480



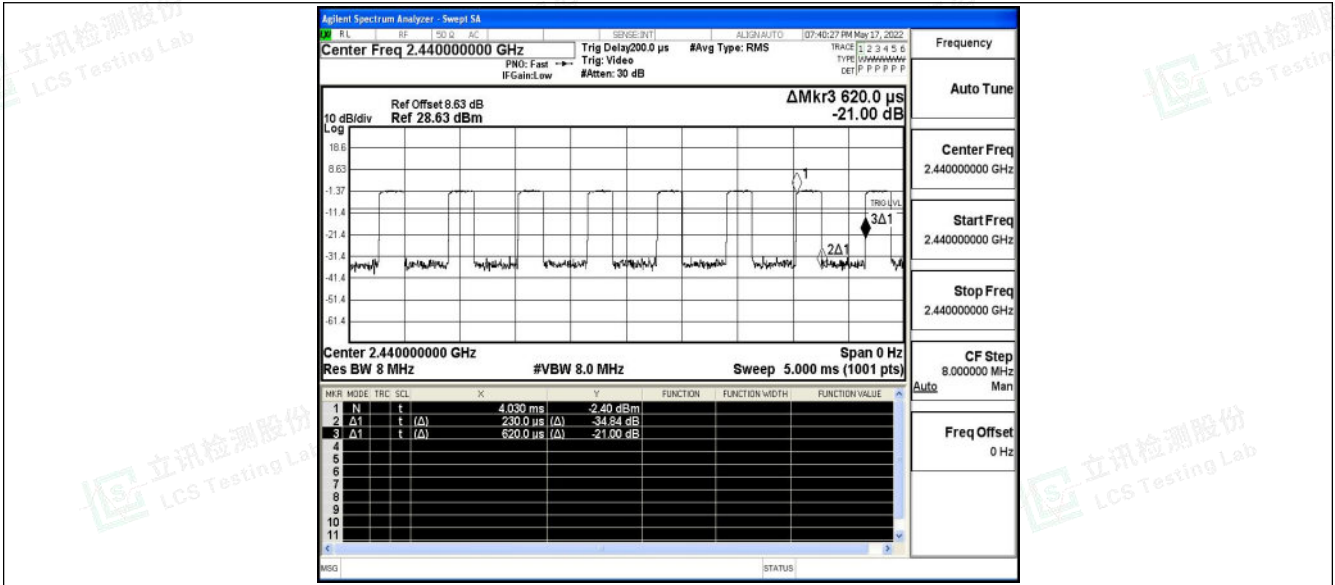


BLE_2M_Ant1_2402

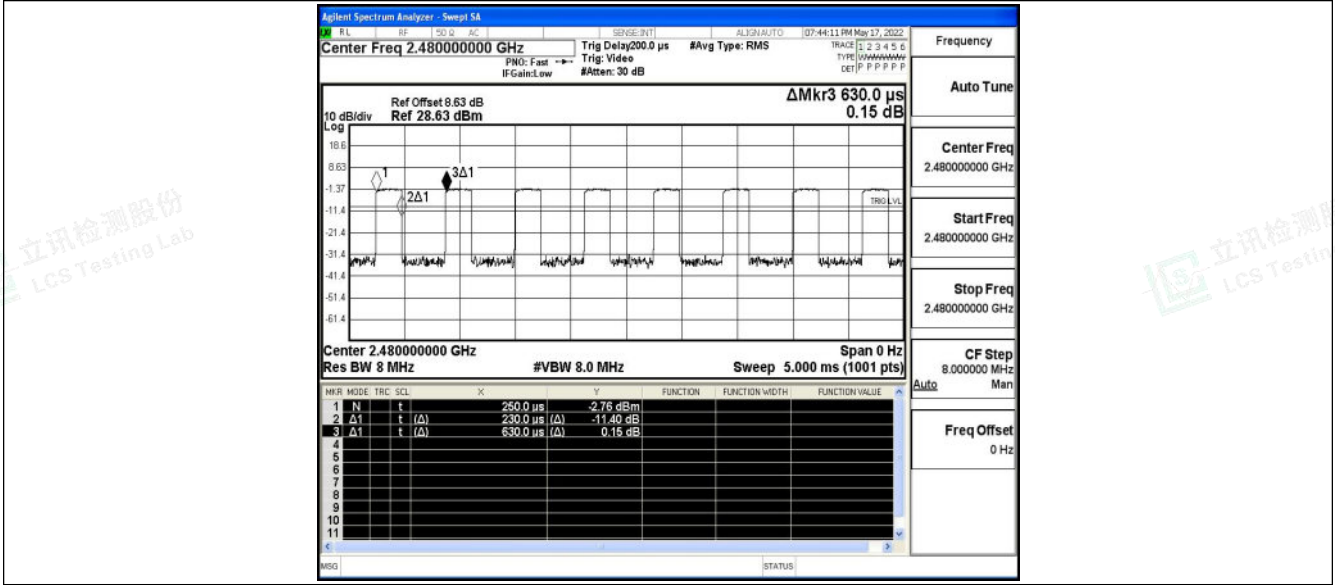


BLE_2M_Ant1_2440





BLE_2M_Ant1_2480





B.8 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	-57.39	≤-41.20	37.81	≤54	PASS
				AV	2388.620	-56.2	≤-41.20	39.00	≤54	PASS
				AV	2390.000	-56.52	≤-41.20	38.68	≤54	PASS
				Peak	2310.000	-48.64	≤-21.20	46.56	≤74	PASS
				Peak	2358.275	-46.48	≤-21.20	48.72	≤74	PASS
				Peak	2390.000	-47.05	≤-21.20	48.15	≤74	PASS
		High	2480	AV	2483.500	-50.77	≤-41.20	44.43	≤54	PASS
				AV	2483.520	-50.77	≤-41.20	44.43	≤54	PASS
				AV	2500.000	-56.37	≤-41.20	38.83	≤54	PASS
				Peak	2483.500	-32.68	≤-21.20	62.52	≤74	PASS
				Peak	2483.520	-32.68	≤-21.20	62.52	≤74	PASS
				Peak	2500.000	-47.26	≤-21.20	47.94	≤74	PASS
BLE_2M	Ant1	Low	2402	AV	2310.000	-57.14	≤-41.20	38.06	≤54	PASS
				AV	2387.360	-55.44	≤-41.20	39.76	≤54	PASS
				AV	2390.000	-56.22	≤-41.20	38.98	≤54	PASS
				Peak	2310.000	-47.49	≤-21.20	47.71	≤74	PASS
				Peak	2386.520	-46.37	≤-21.20	48.83	≤74	PASS
				Peak	2390.000	-47.76	≤-21.20	47.44	≤74	PASS
		High	2480	AV	2483.500	-50.9	≤-41.20	44.30	≤54	PASS
				AV	2483.520	-50.9	≤-41.20	44.30	≤54	PASS
				AV	2500.000	-56.15	≤-41.20	39.05	≤54	PASS
				Peak	2483.500	-35.07	≤-21.20	60.13	≤74	PASS
				Peak	2483.520	-35.07	≤-21.20	60.13	≤74	PASS
				Peak	2500.000	-47.14	≤-21.20	48.06	≤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.

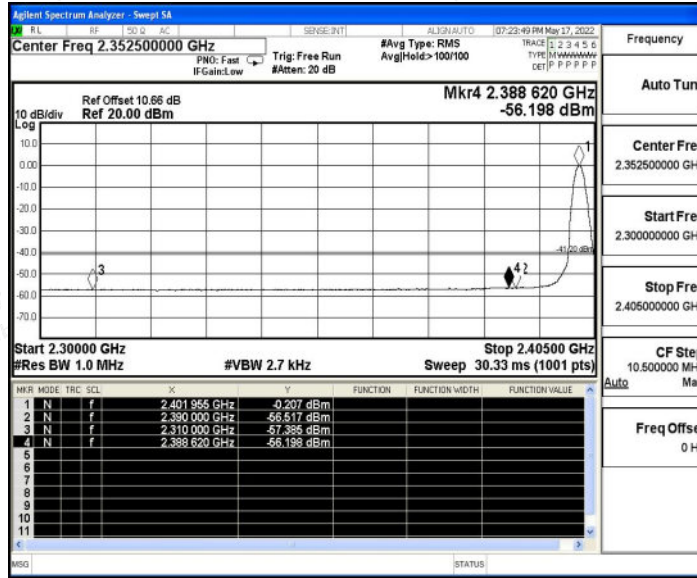


Shenzhen LCS Compliance Testing Laboratory Ltd.
 Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China
 Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com
 Scan code to check authenticity

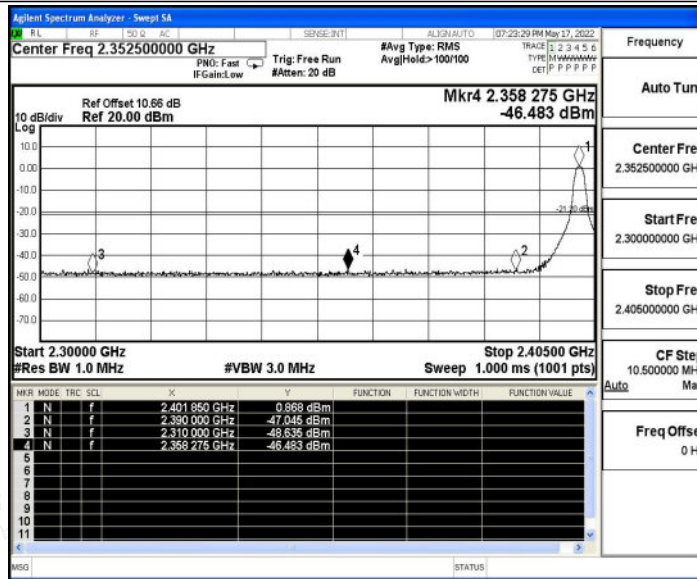


Test Graphs

BLE_1M_Ant1_Low_2402_AV

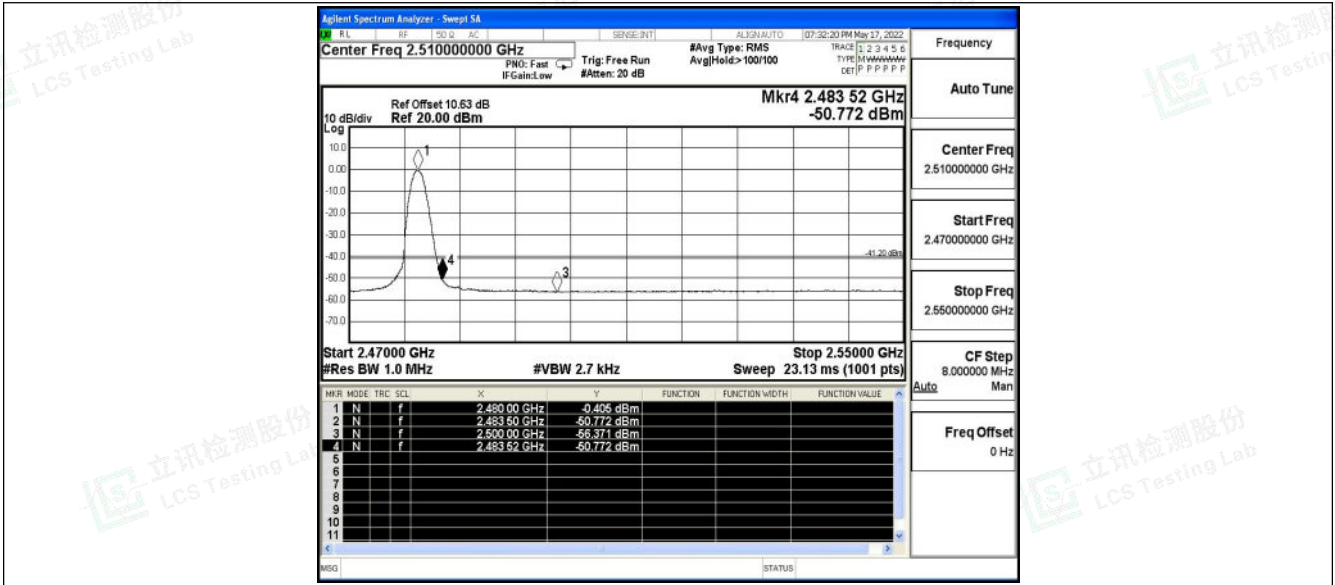


BLE_1M_Ant1_Low_2402_Peak

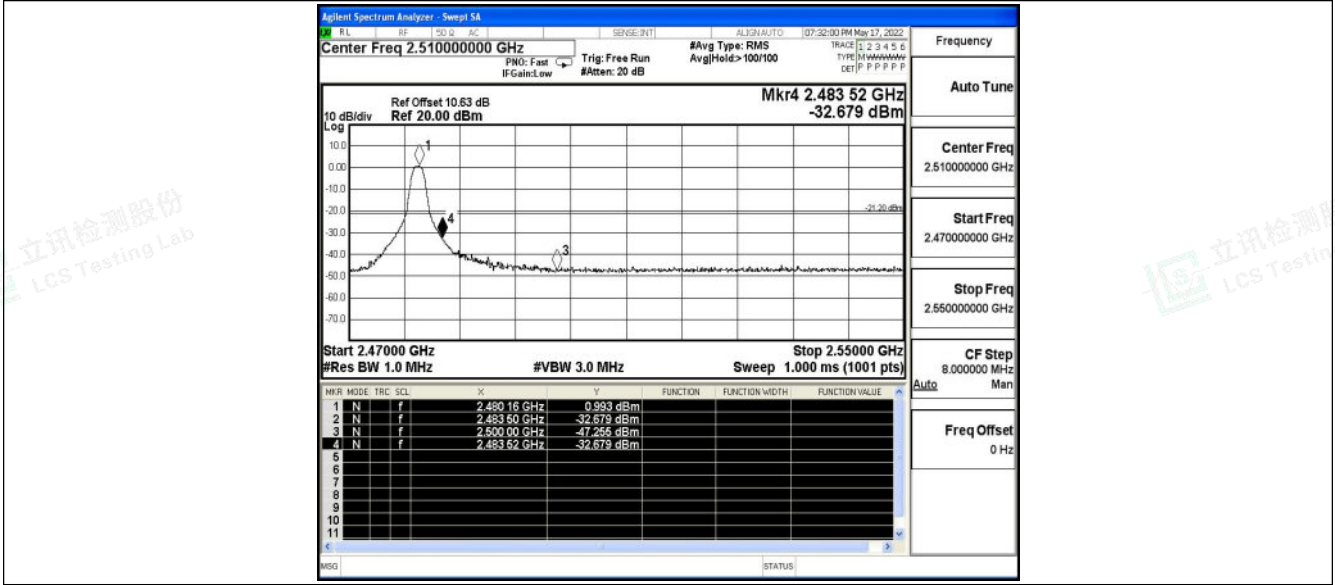


BLE_1M_Ant1_High_2480_AV



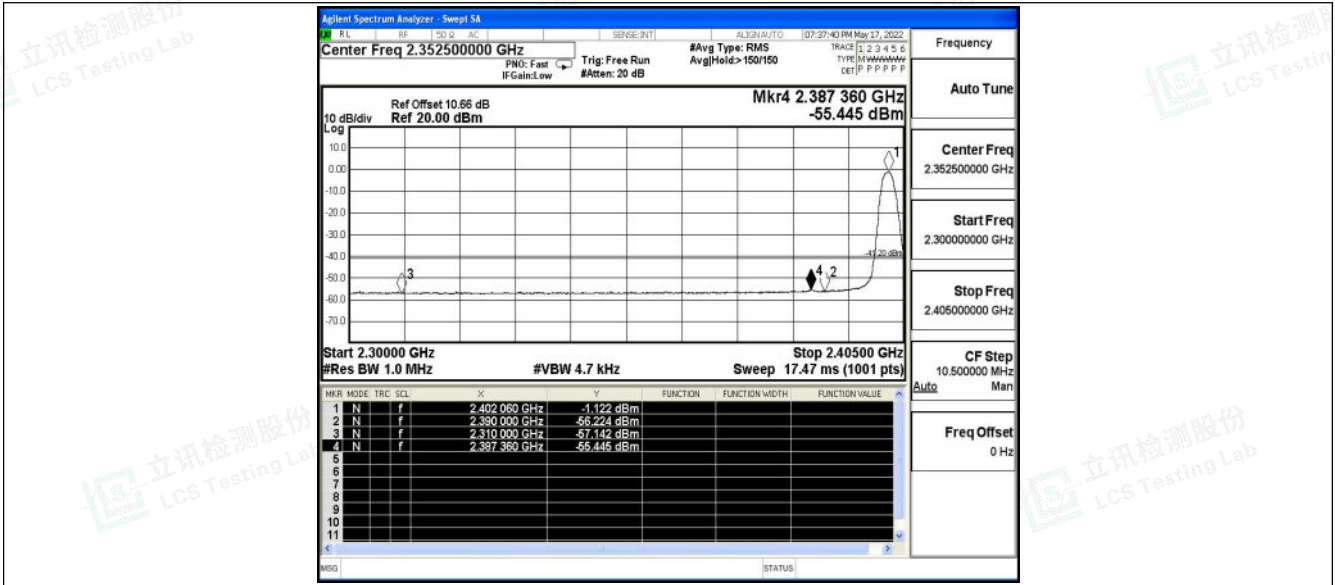


BLE_1M_Ant1_High_2480_Peak

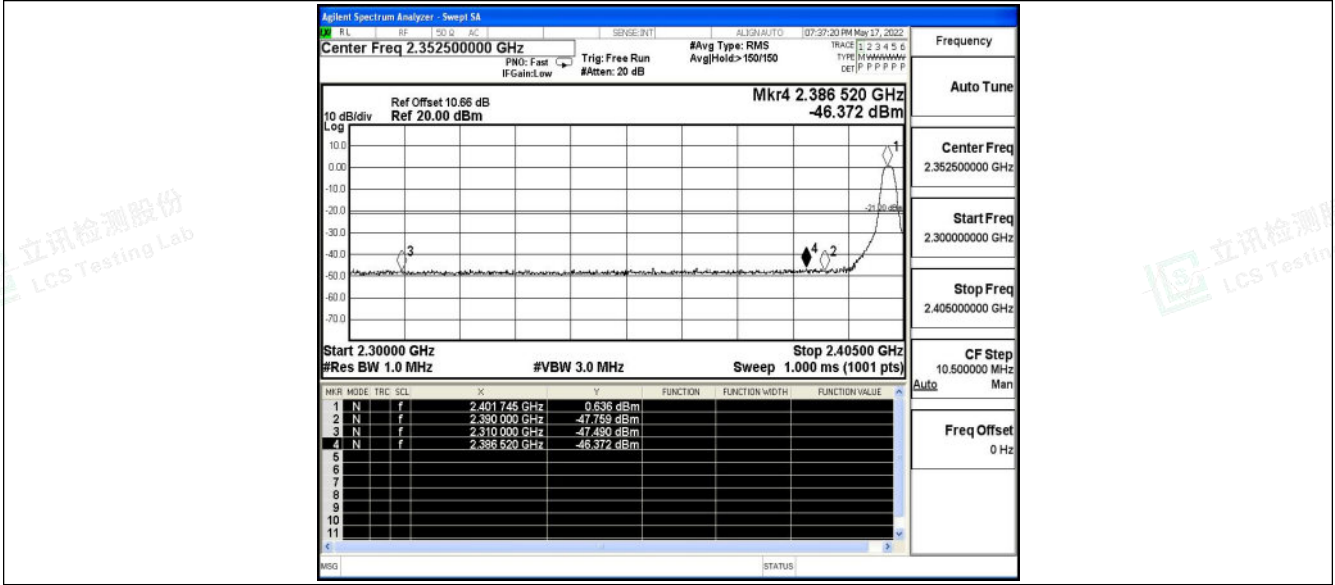


BLE_2M_Ant1_Low_2402_AV



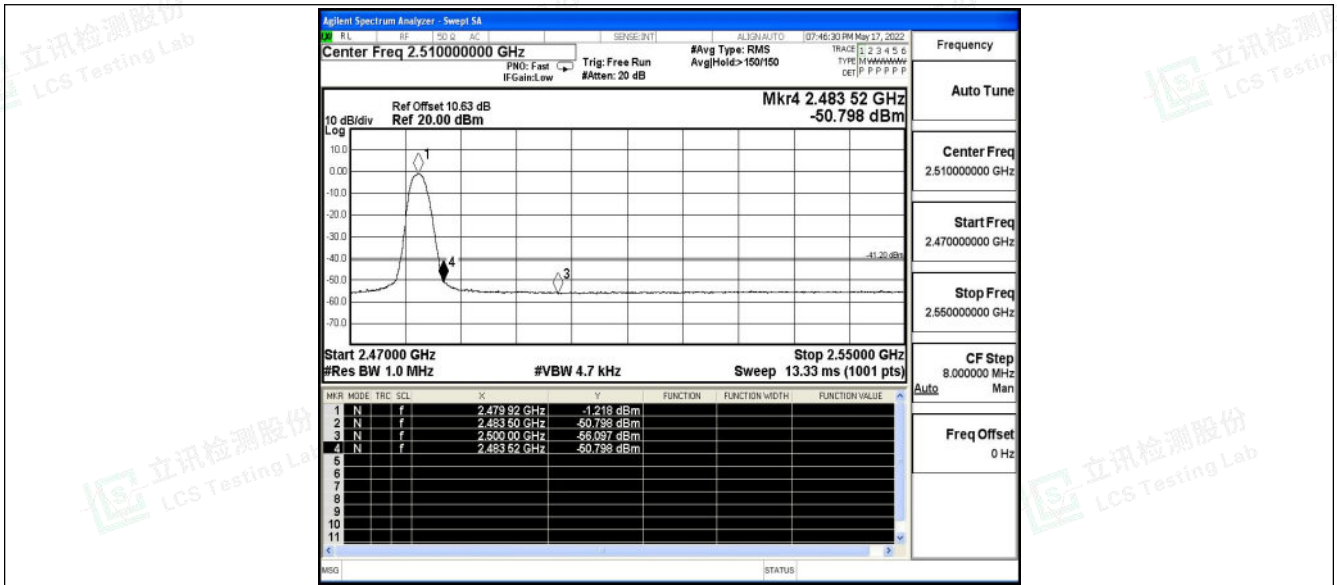


BLE_2M_Ant1_Low_2402_Peak



BLE_2M_Ant1_High_2480_AV





BLE_2M_Ant1_High_2480_Peak

