



Appendix B

RF Test Data for BT LE (Conducted Measurement)

Product Name: Smart Watch

Test Model: 38083

Environmental Conditions

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



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B.1 DTS Bandwidth

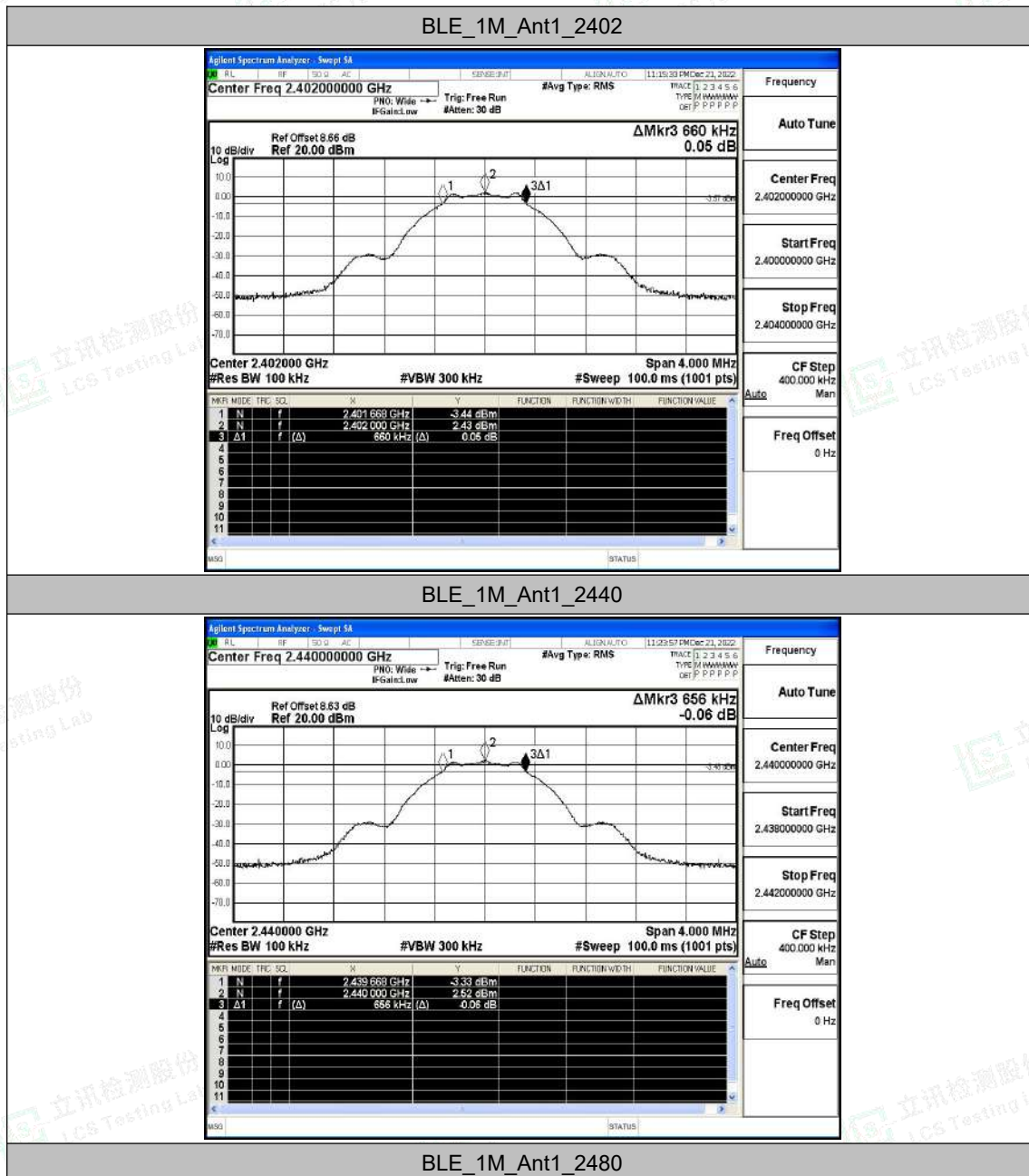
Test Result

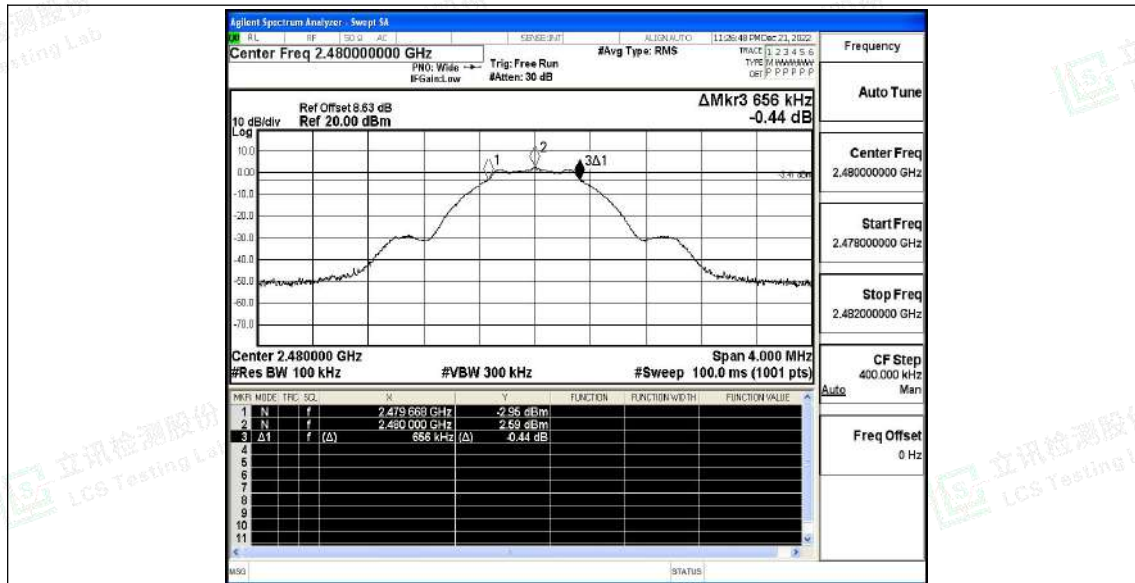
TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.660	2401.668	2402.328	0.5	PASS
		2440	0.656	2439.668	2440.324	0.5	PASS
		2480	0.656	2479.668	2480.324	0.5	PASS
BLE_2M	Ant1	2402	1.092	2401.480	2402.572	0.5	PASS
		2440	0.952	2439.456	2440.408	0.5	PASS
		2480	1.116	2479.456	2480.572	0.5	PASS



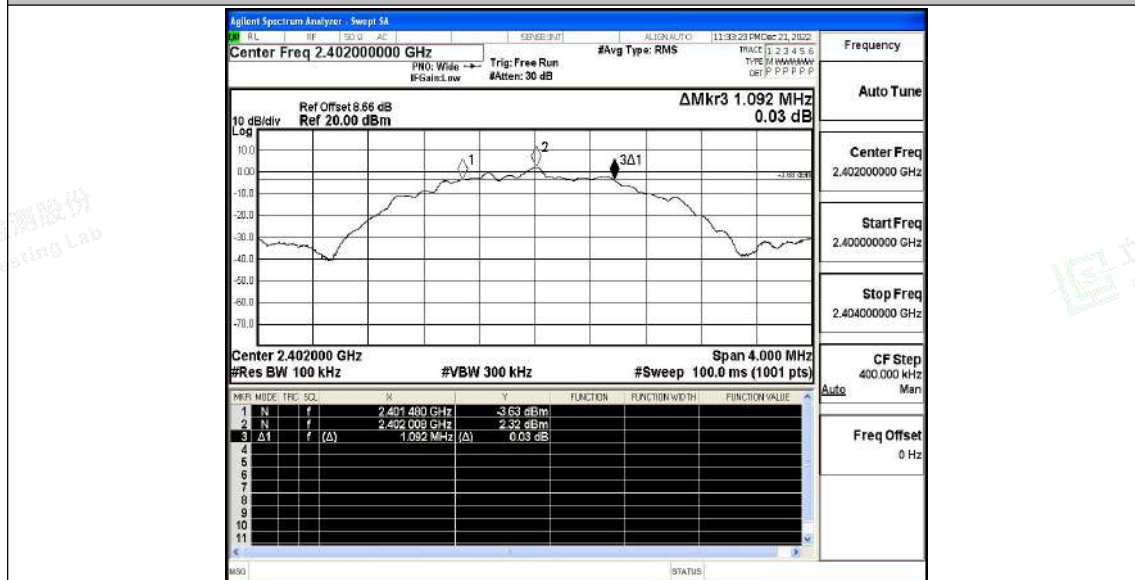


Test Graphs



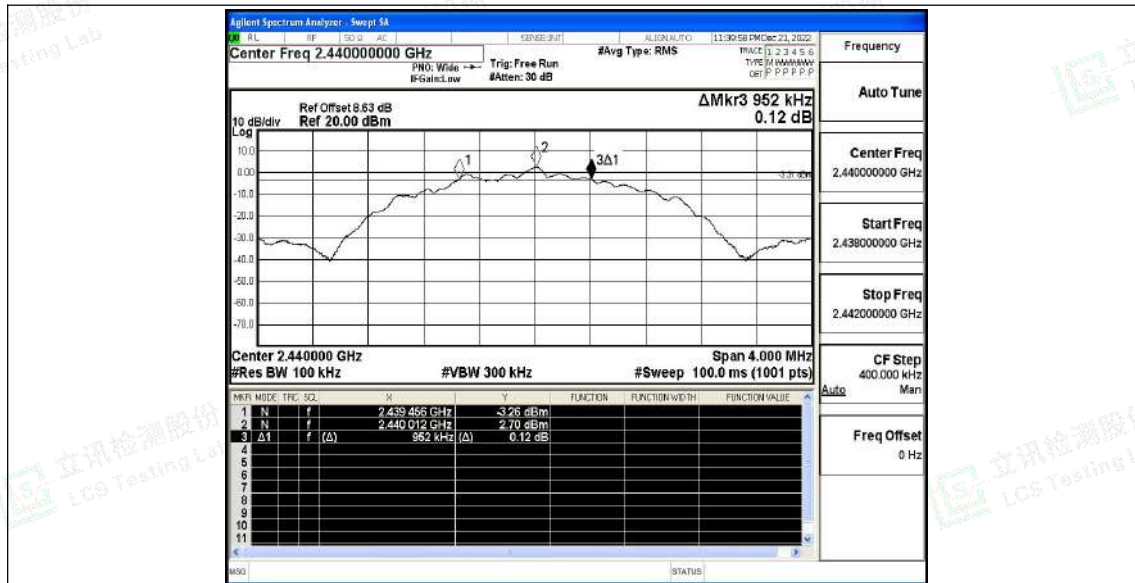


BLE_2M_Ant1_2402

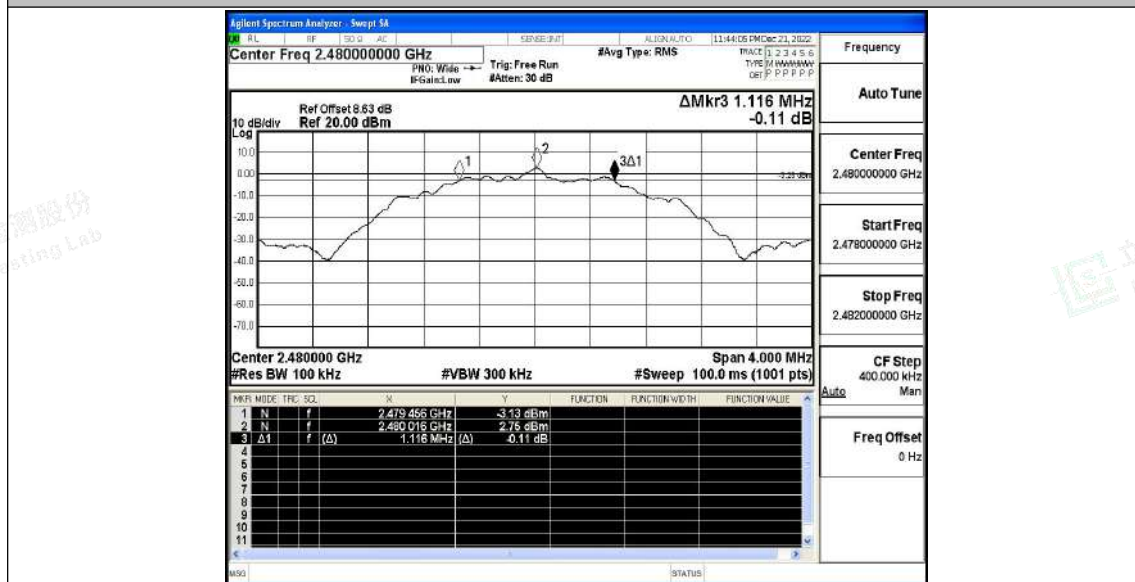


BLE_2M_Ant1_2440





BLE_2M_Ant1_2480





B.2 Maximum conducted output power

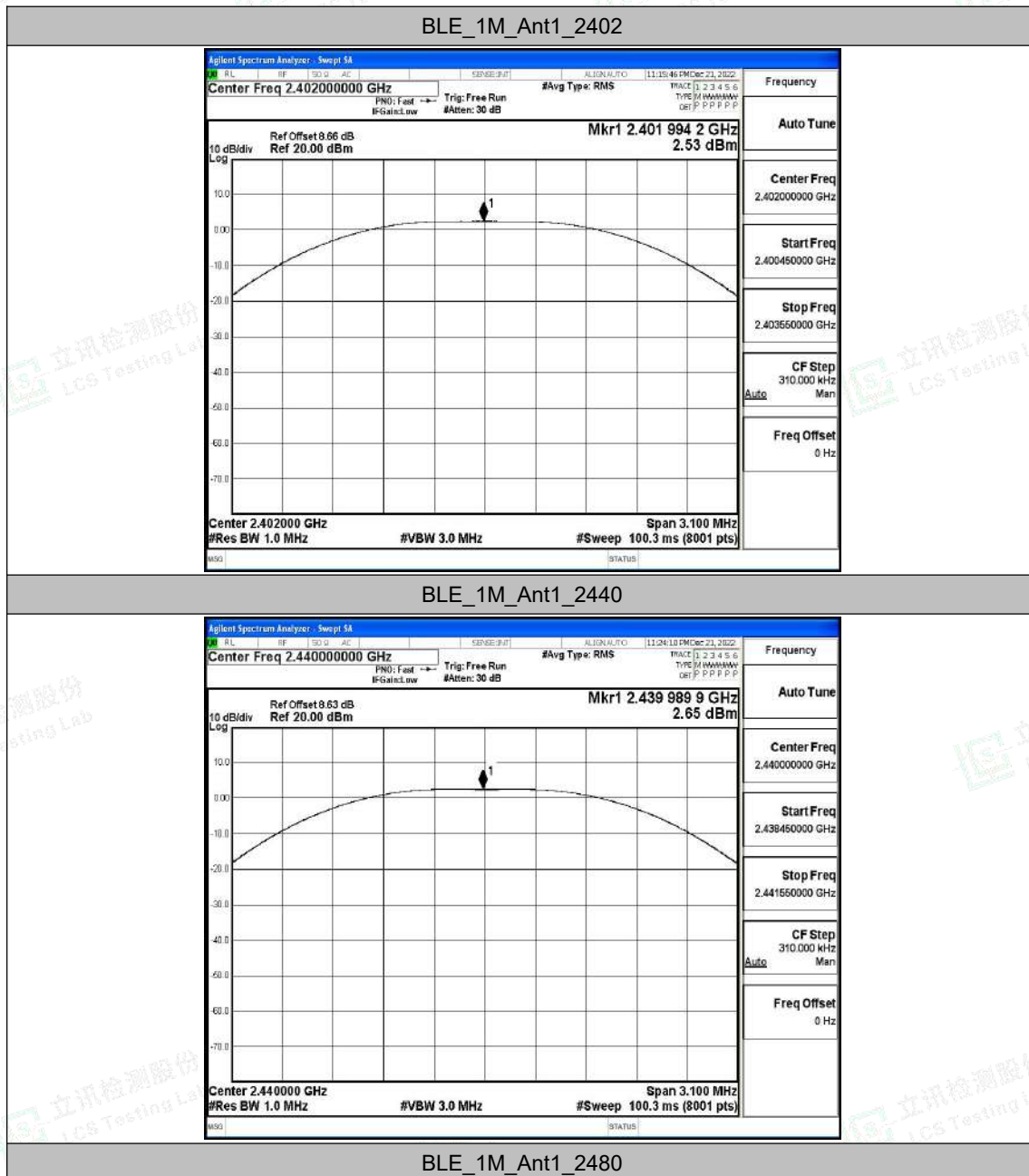
Test Result

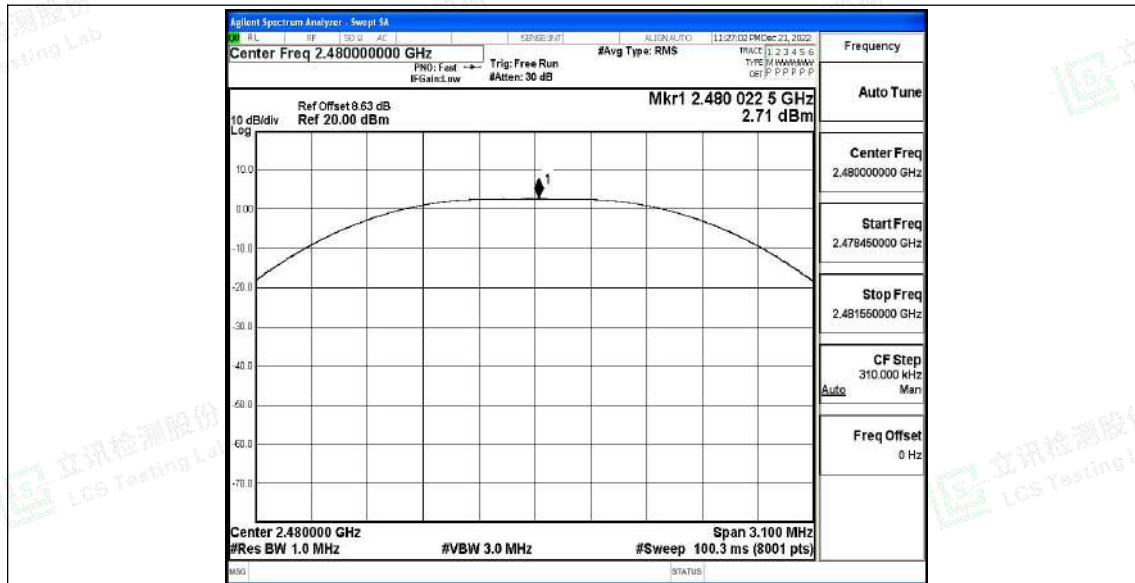
TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	2.53	≤30	PASS
		2440	2.65	≤30	PASS
		2480	2.71	≤30	PASS
BLE_2M	Ant1	2402	2.61	≤30	PASS
		2440	2.97	≤30	PASS
		2480	3.04	≤30	PASS



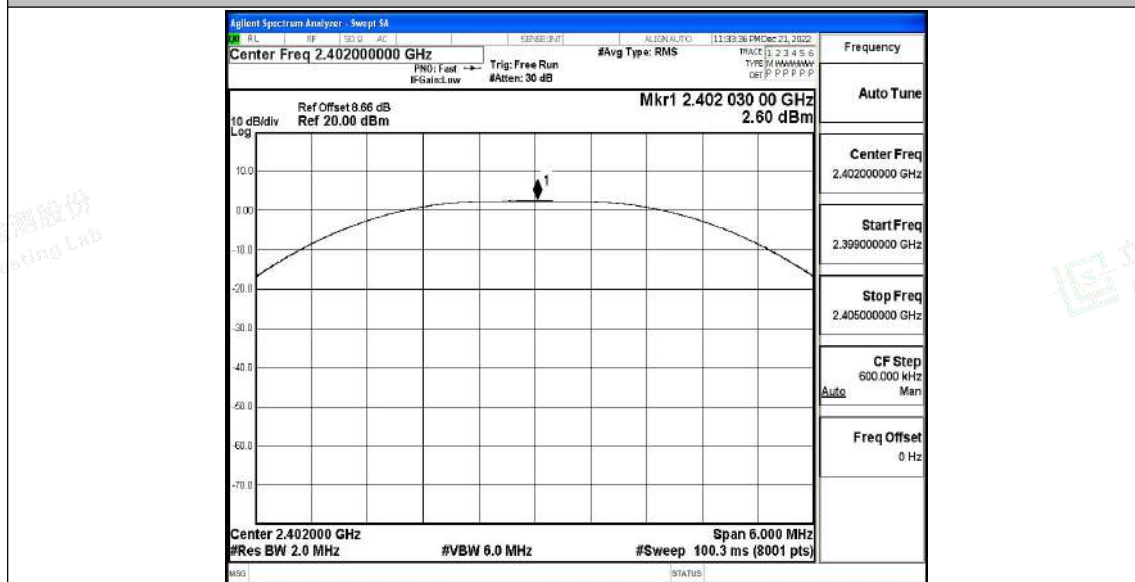


Test Graphs



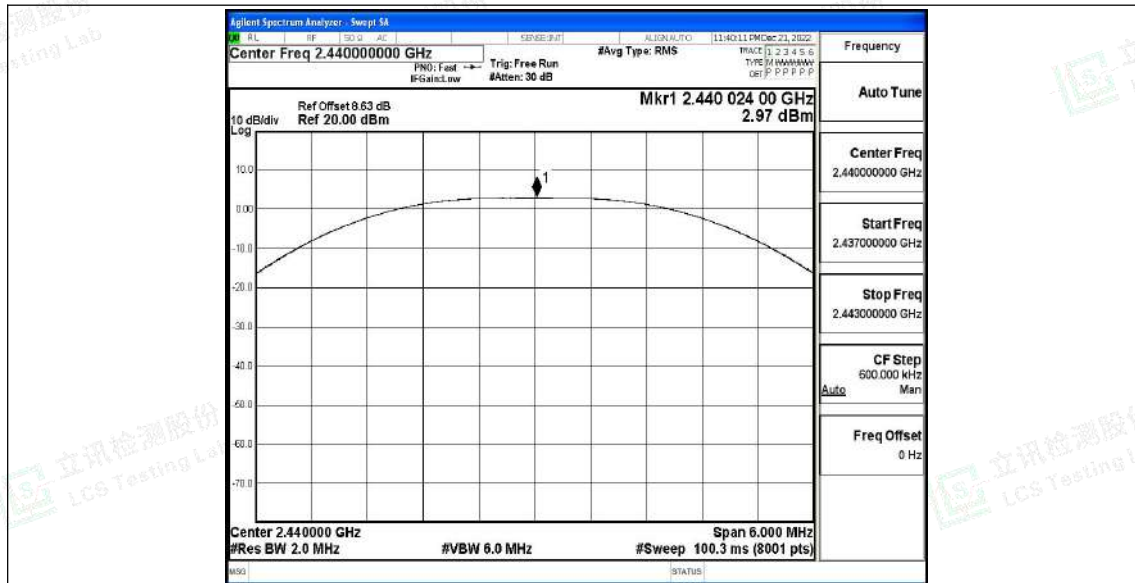


BLE_2M_Ant1_2402

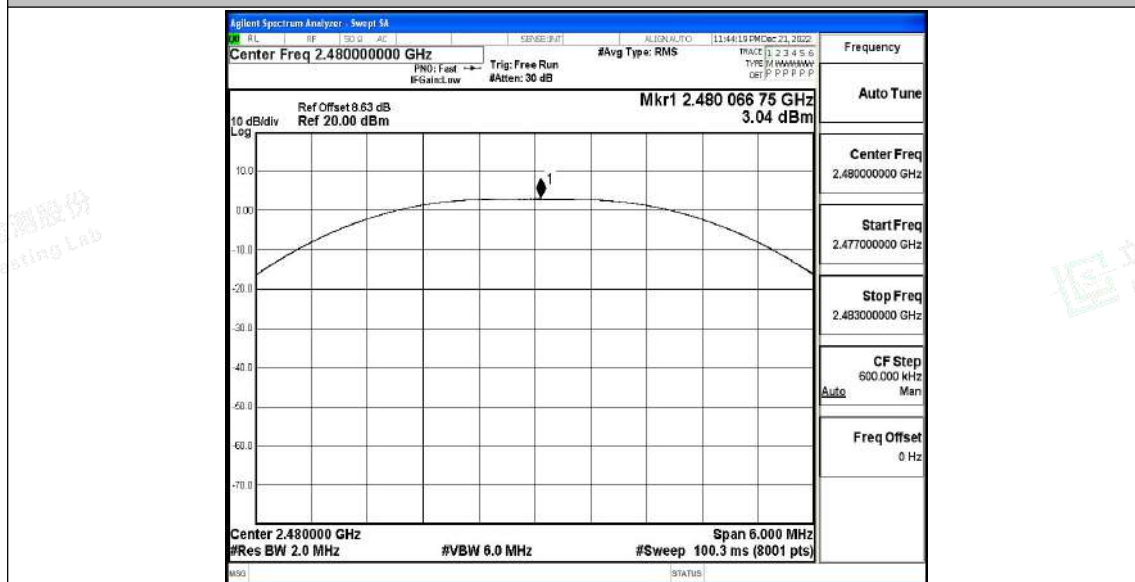


BLE_2M_Ant1_2440





BLE_2M_Ant1_2480





B.3 Maximum power spectral density

Test Result

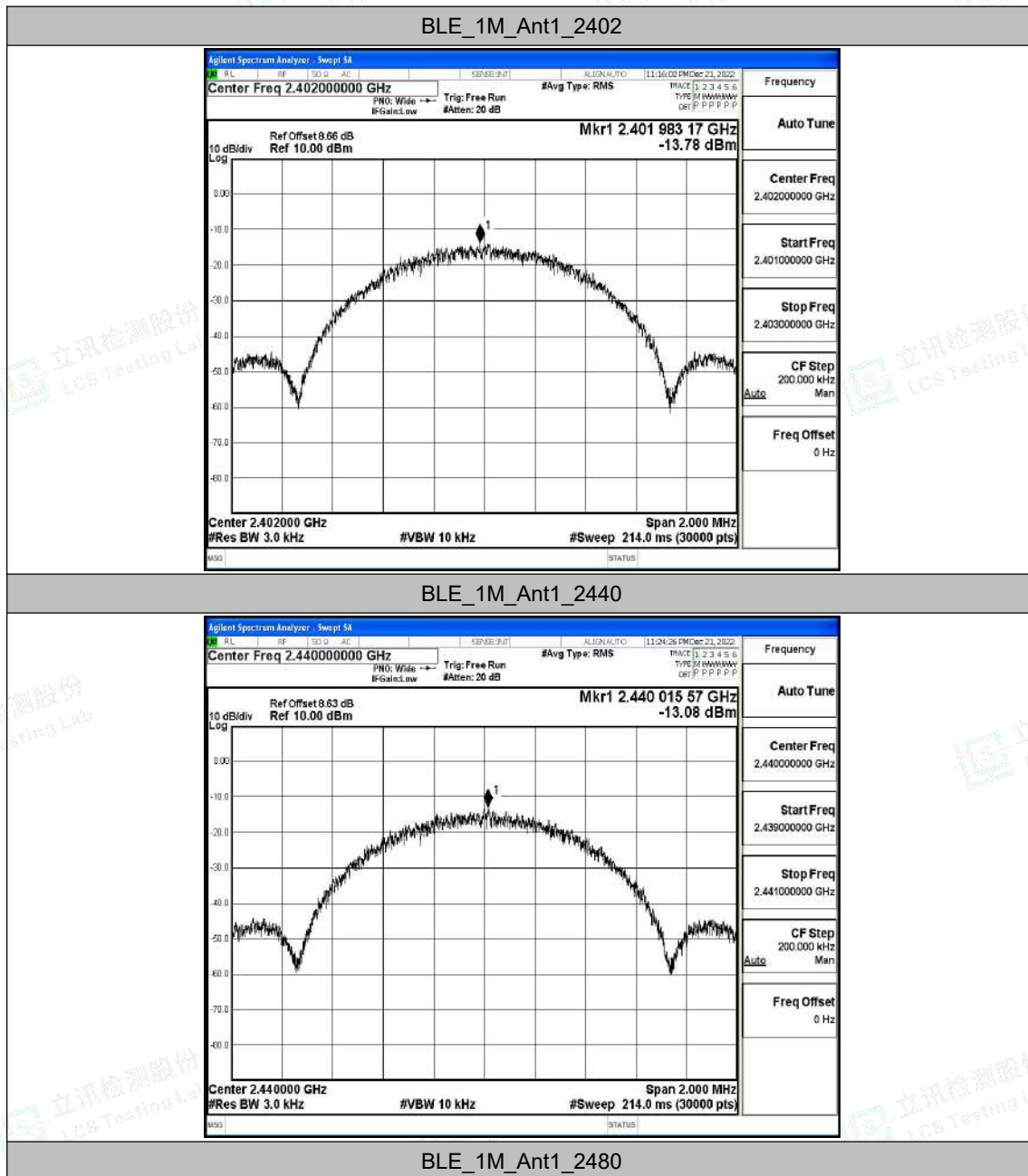
TestMode	Antenna	Channel	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-13.78	≤8.00	PASS
		2440	-13.08	≤8.00	PASS
		2480	-12.67	≤8.00	PASS
BLE_2M	Ant1	2402	-14.96	≤8.00	PASS
		2440	-13.67	≤8.00	PASS
		2480	-15.01	≤8.00	PASS

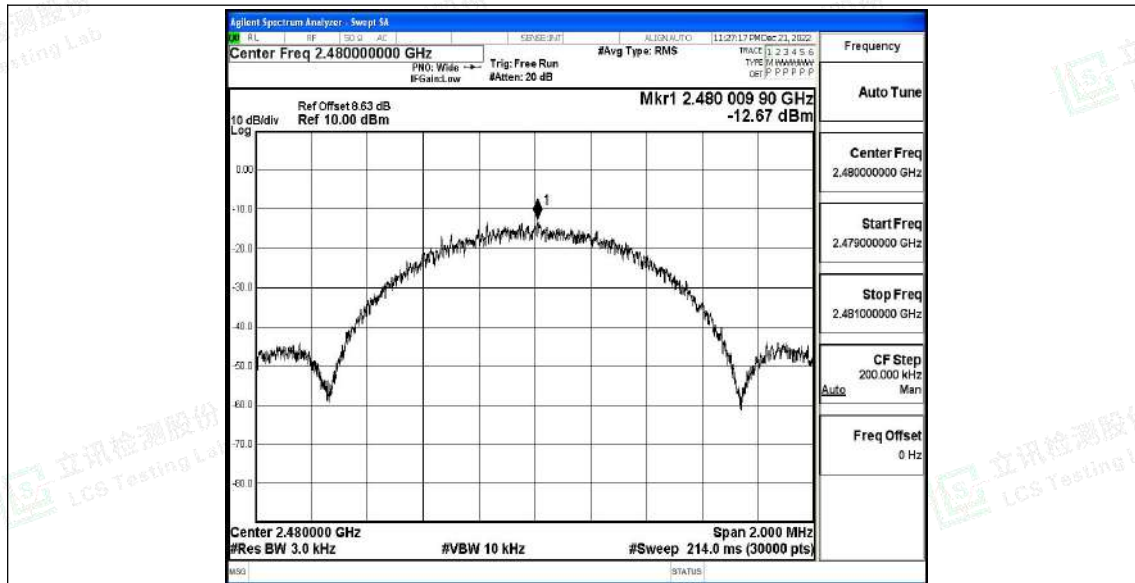


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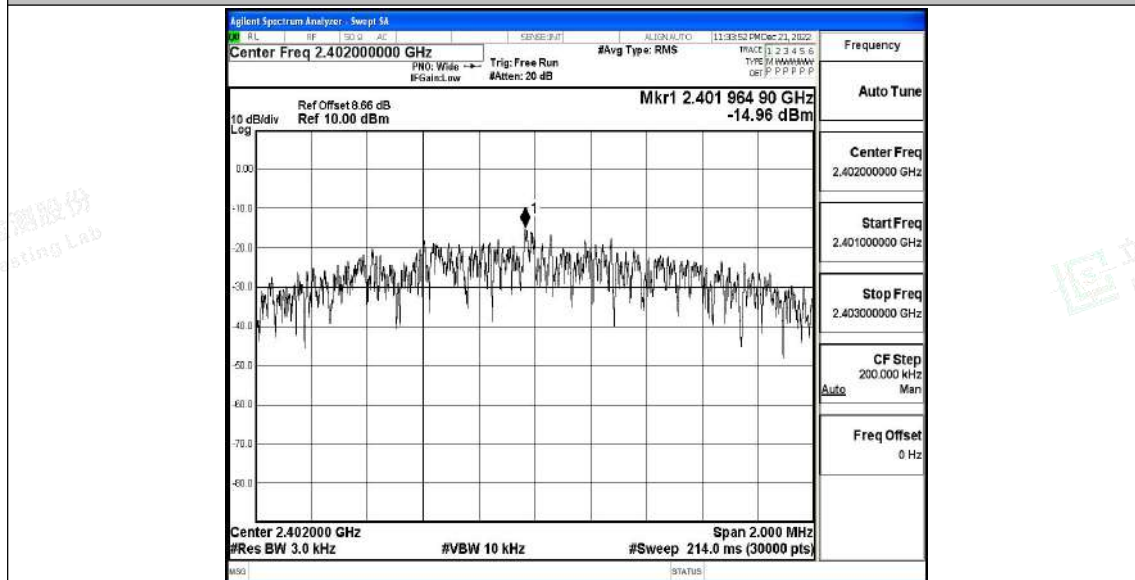


Test Graphs



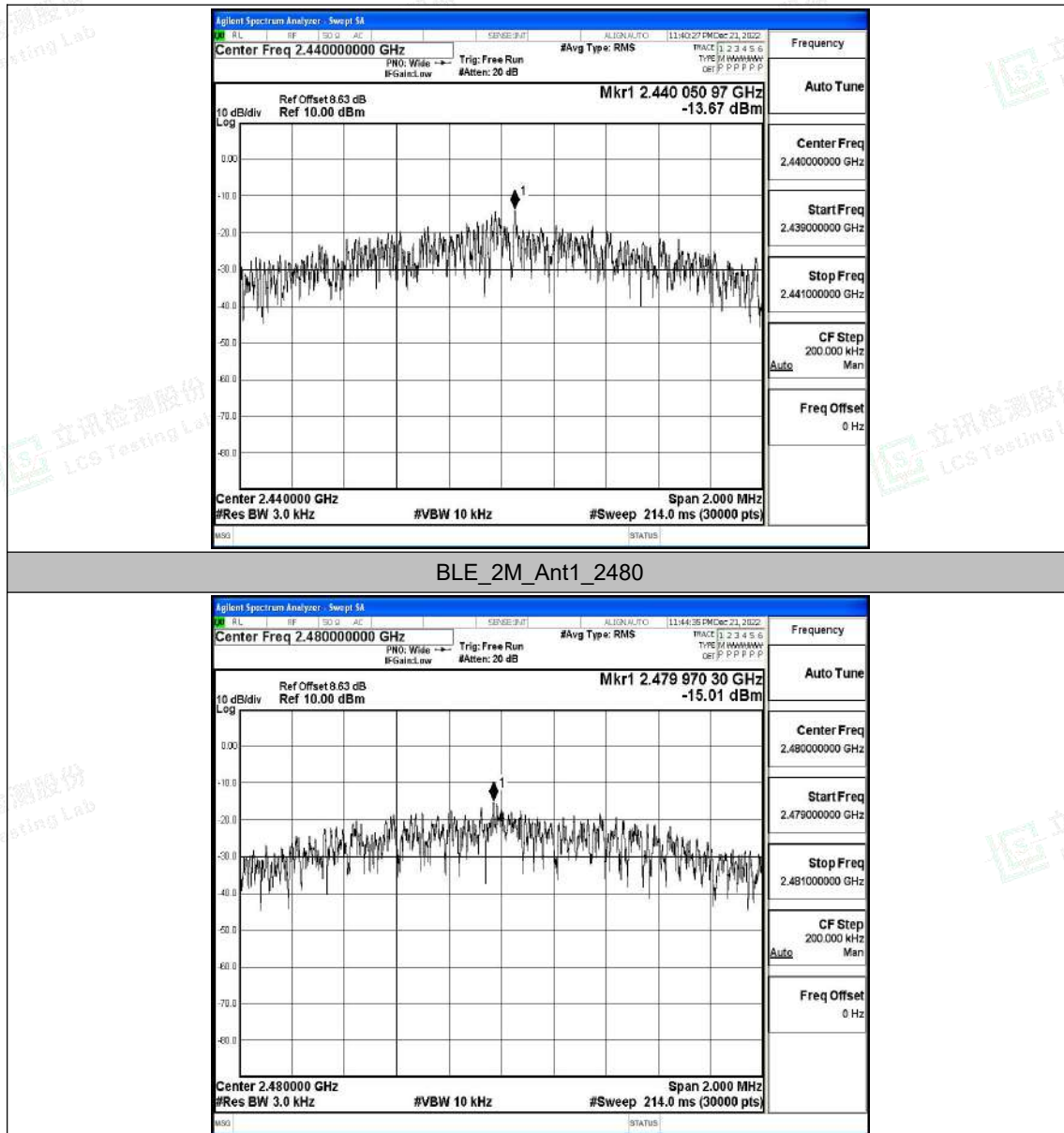


BLE_2M_Ant1_2402



BLE_2M_Ant1_2440







B.4 Band edge measurements

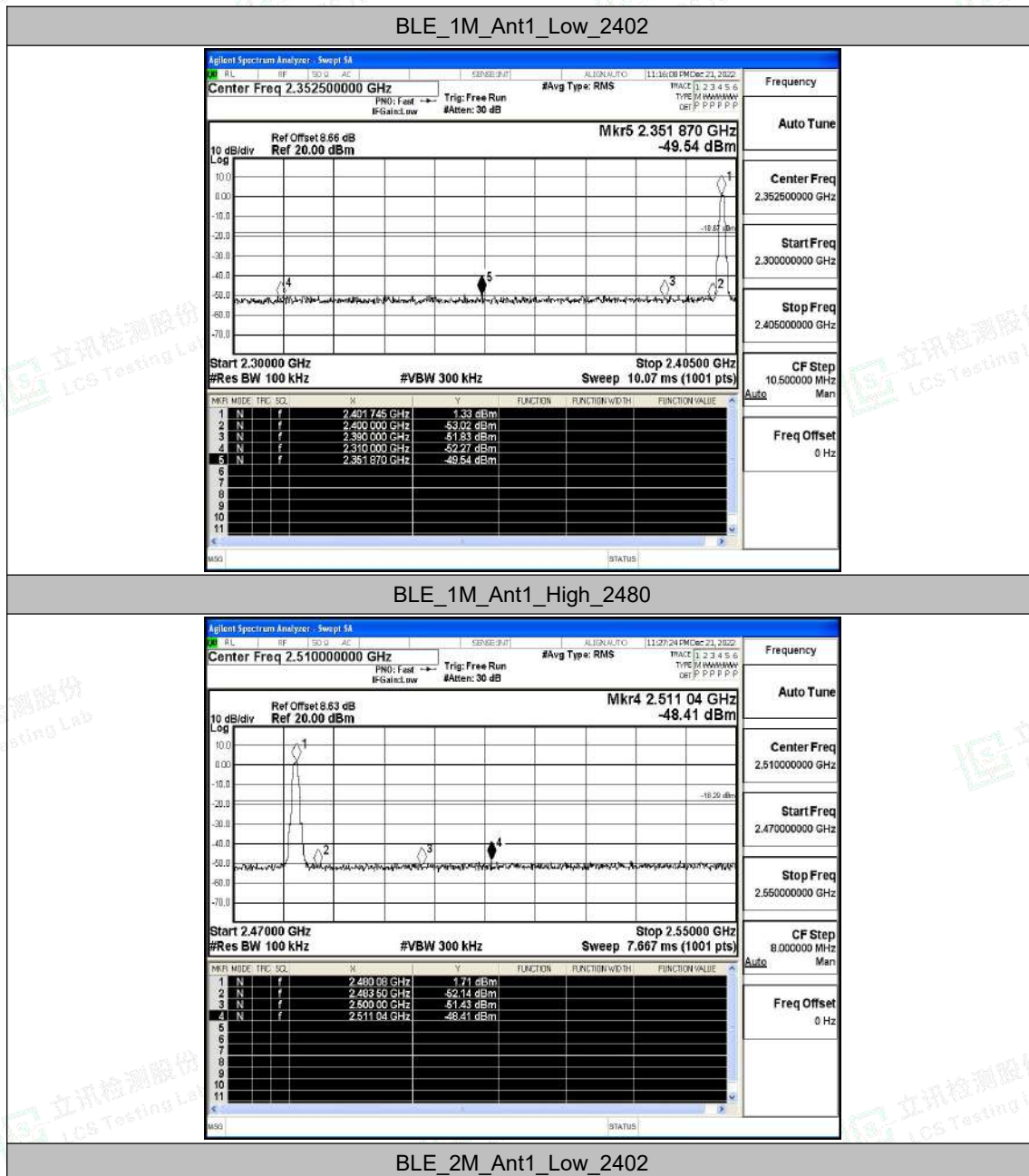
Test Result

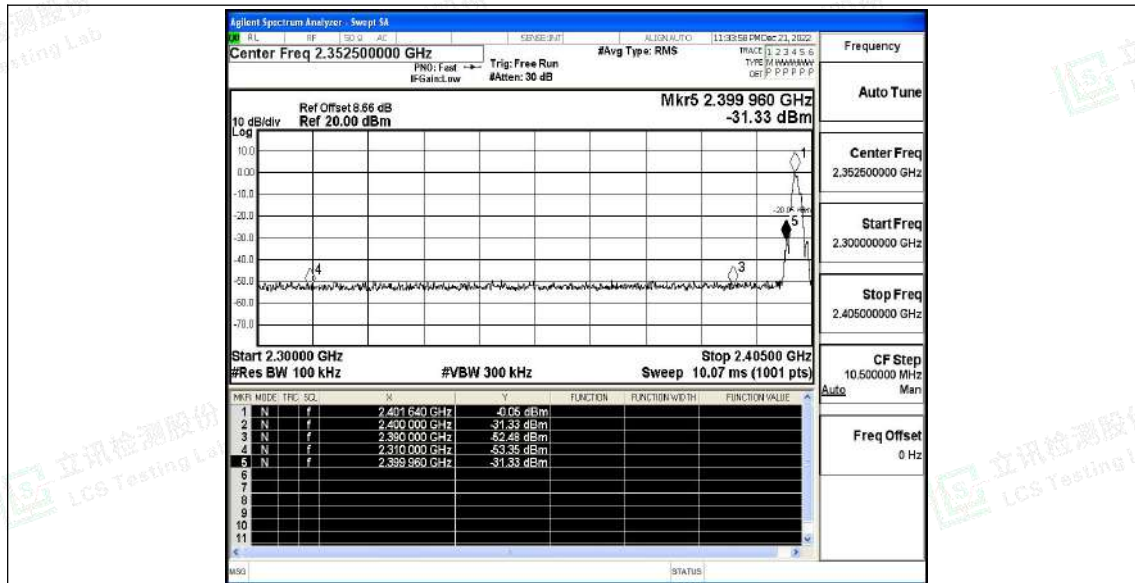
TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	1.33	-49.54	≤-18.67	PASS
		High	2480	1.71	-48.41	≤-18.29	PASS
BLE_2M	Ant1	Low	2402	-0.05	-31.33	≤-20.05	PASS
		High	2480	1.15	-48.21	≤-18.85	PASS



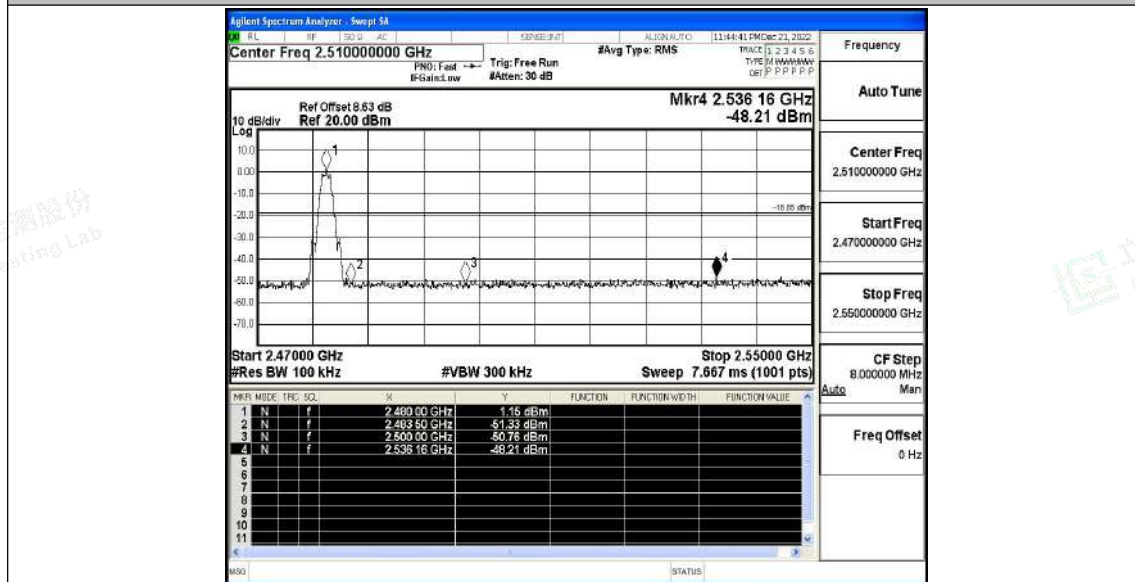


Test Graphs





BLE_2M_Ant1_High_2480





B.5 Conducted Spurious Emission

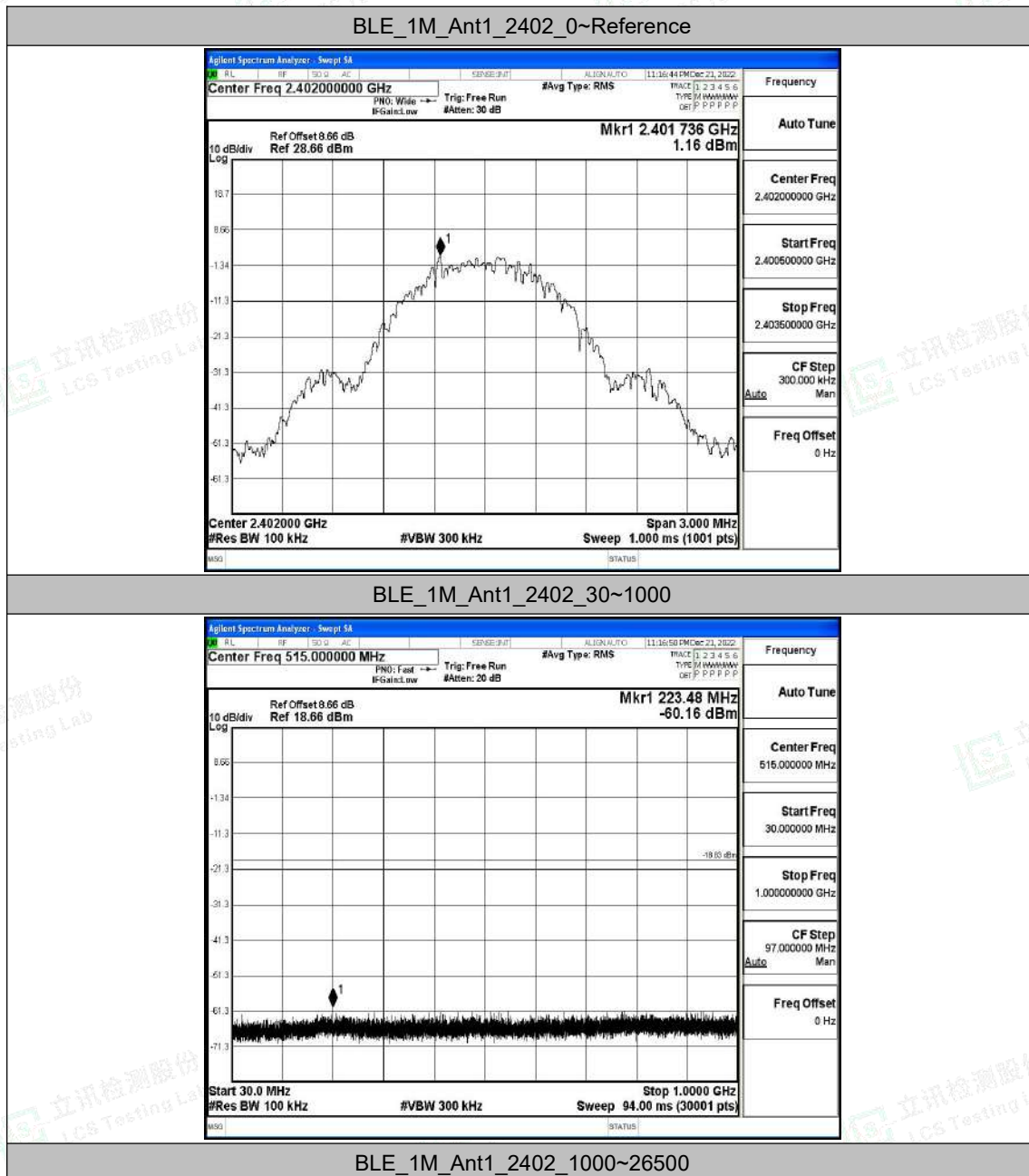
Test Result

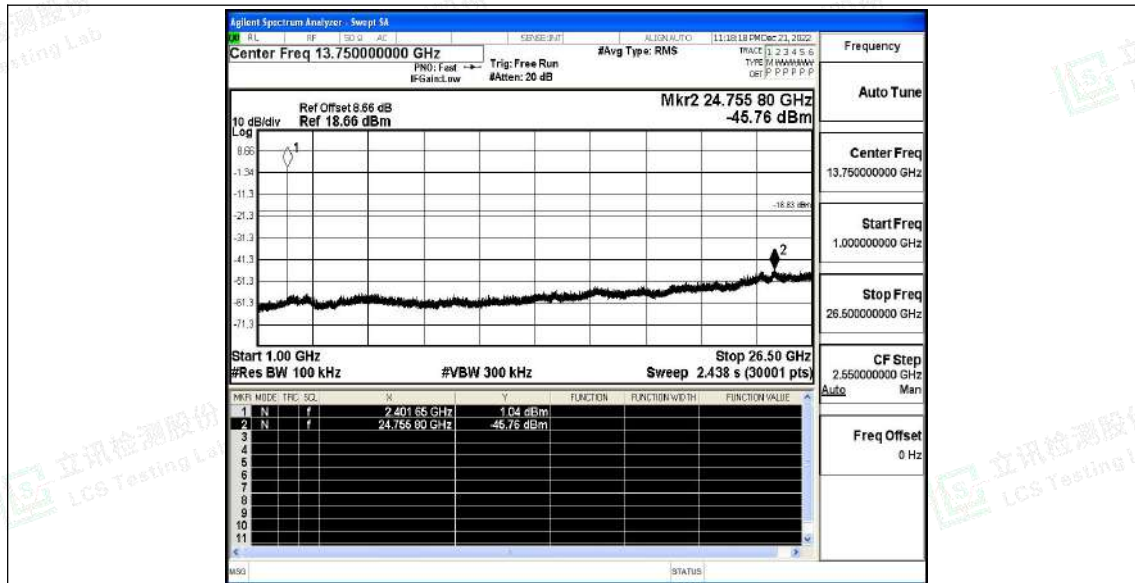
TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	1.17	1.17	---	PASS
			30~1000	1.17	-60.16	≤-18.83	PASS
			1000~26500	1.17	-45.76	≤-18.83	PASS
		2440	Reference	1.33	1.33	---	PASS
			30~1000	1.33	-57.97	≤-18.67	PASS
			1000~26500	1.33	-45.93	≤-18.67	PASS
		2480	Reference	0.98	0.98	---	PASS
			30~1000	0.98	-60.71	≤-19.02	PASS
			1000~26500	0.98	-45.84	≤-19.02	PASS
BLE_2M	Ant1	2402	Reference	-1.29	-1.29	---	PASS
			30~1000	-1.29	-61.14	≤-21.29	PASS
			1000~26500	-1.29	-46.56	≤-21.29	PASS
		2440	Reference	-0.50	-0.50	---	PASS
			30~1000	-0.50	-60.88	≤-20.5	PASS
			1000~26500	-0.50	-46.27	≤-20.5	PASS
		2480	Reference	-1.69	-1.69	---	PASS
			30~1000	-1.69	-60.99	≤-21.69	PASS
			1000~26500	-1.69	-46.08	≤-21.69	PASS



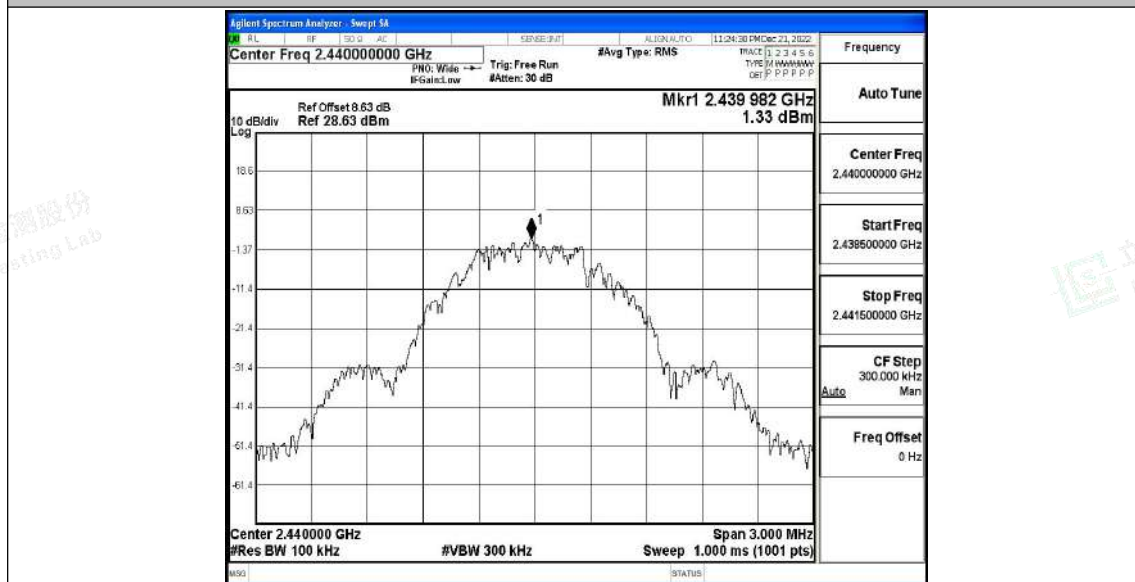


Test Graphs



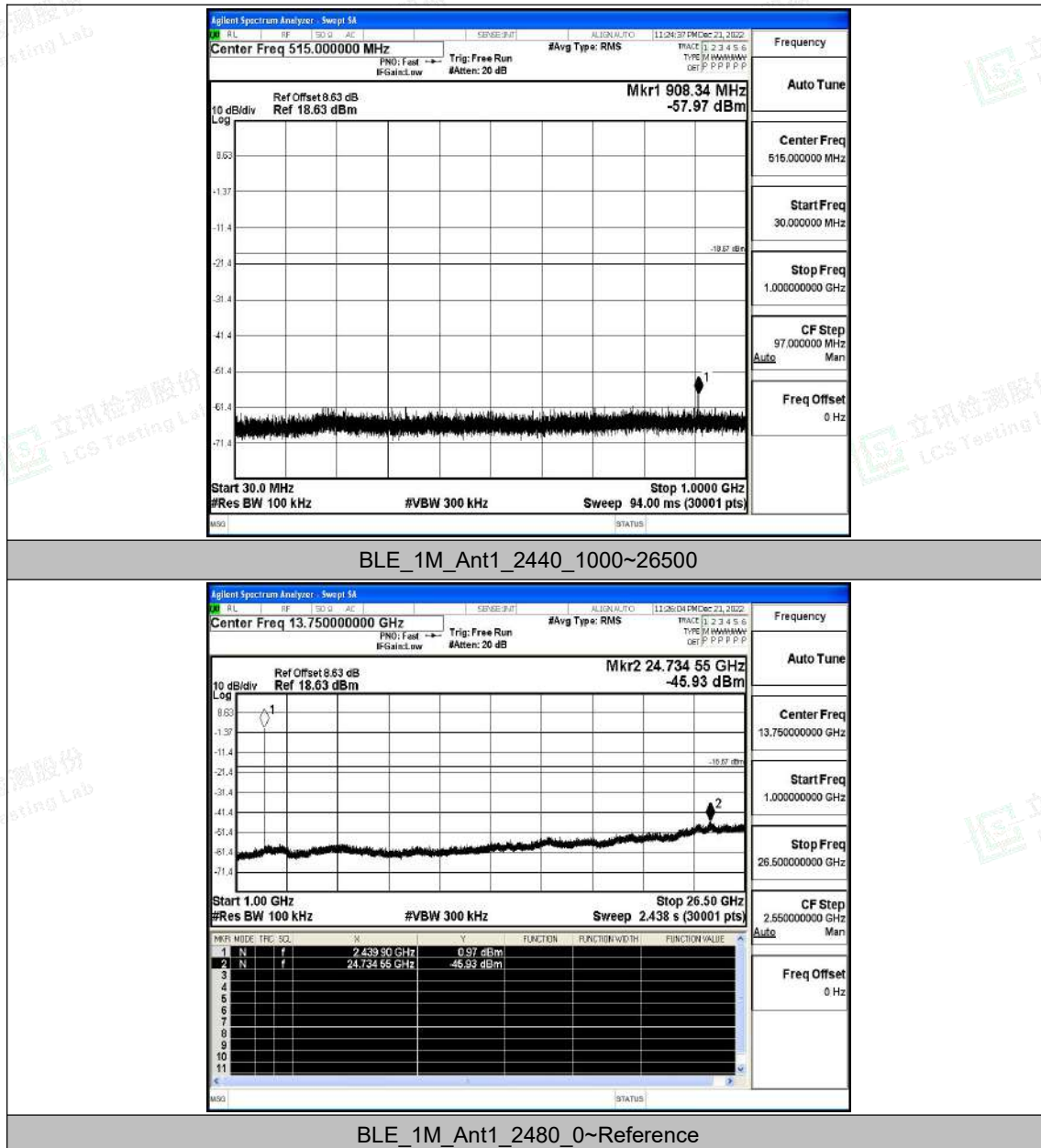


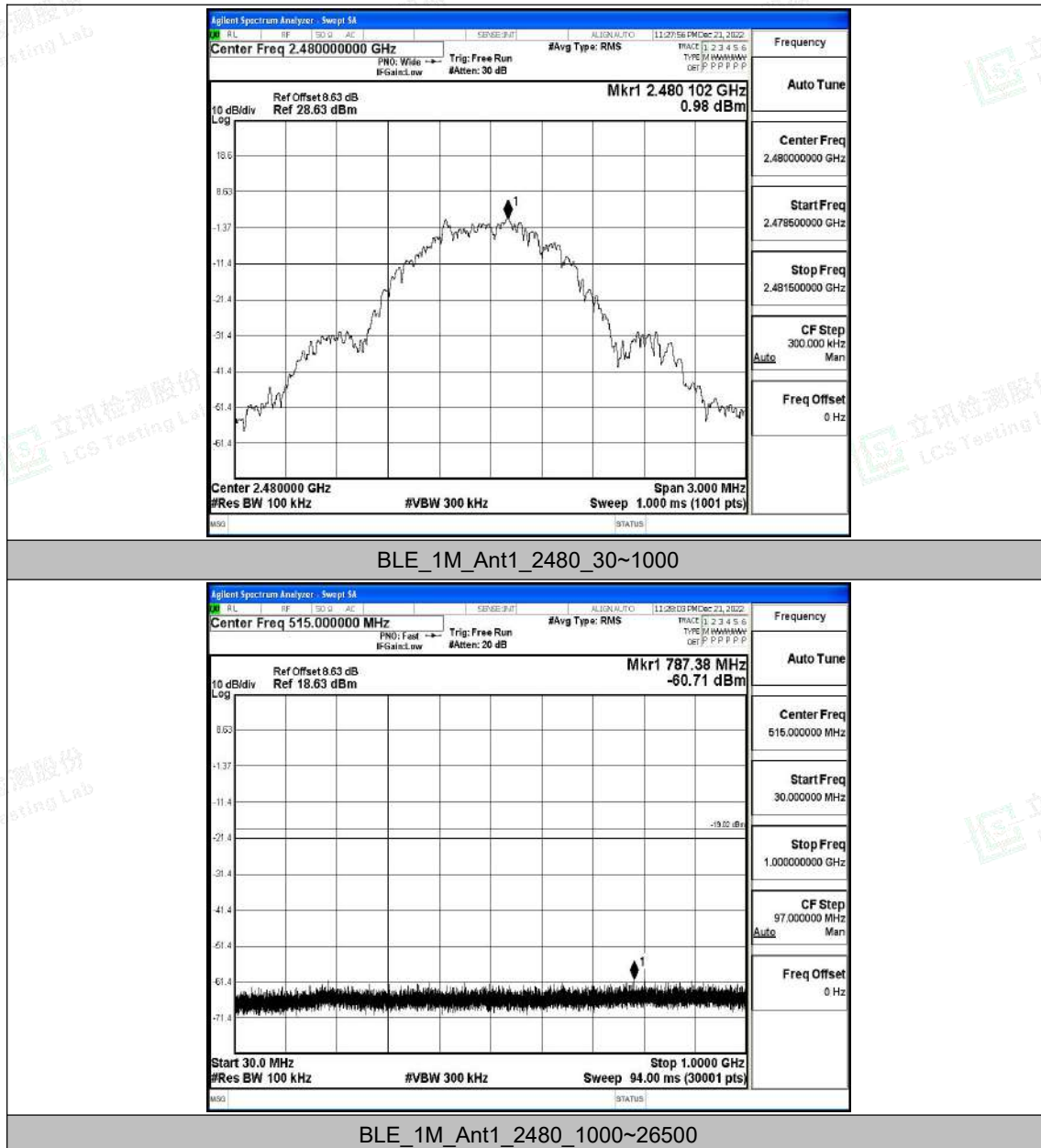
BLE_1M_Ant1_2440_0~Reference

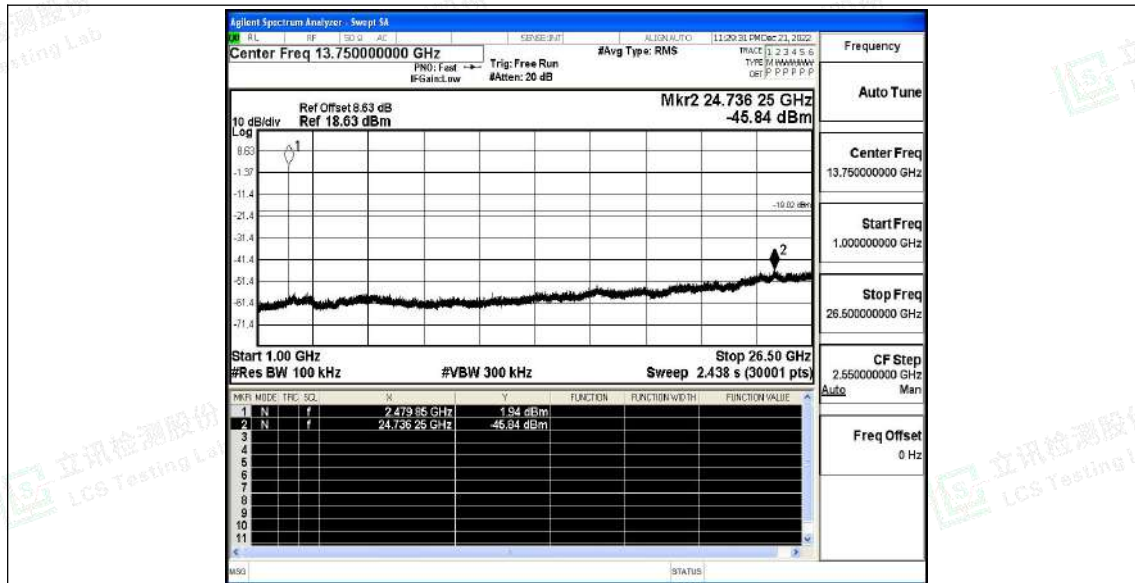


BLE_1M_Ant1_2440_30~1000

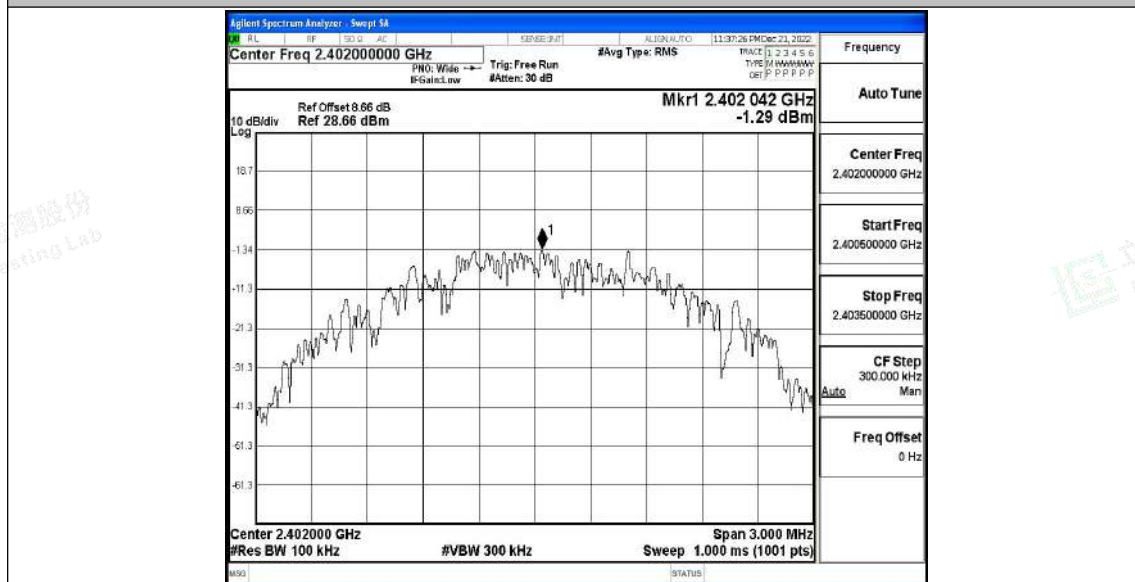






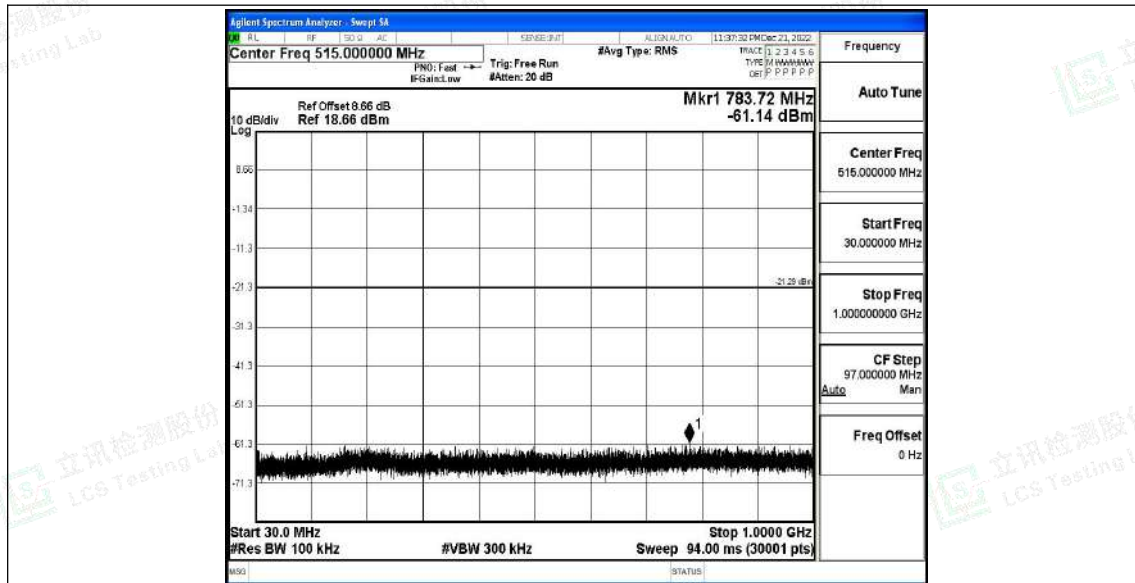


BLE_2M_Ant1_2402_0~Reference

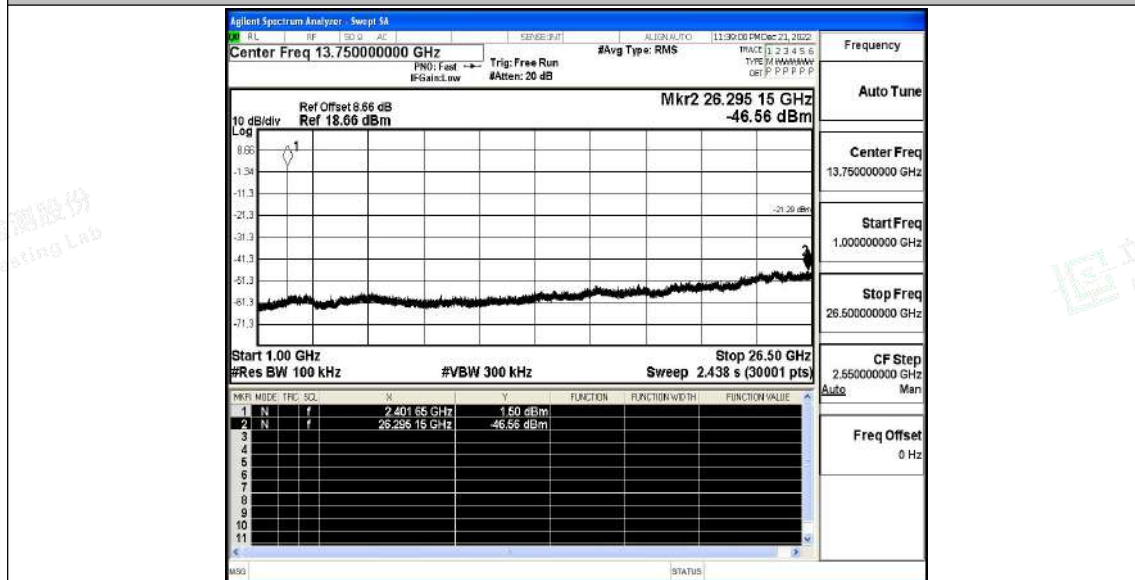


BLE_2M_Ant1_2402_30~1000



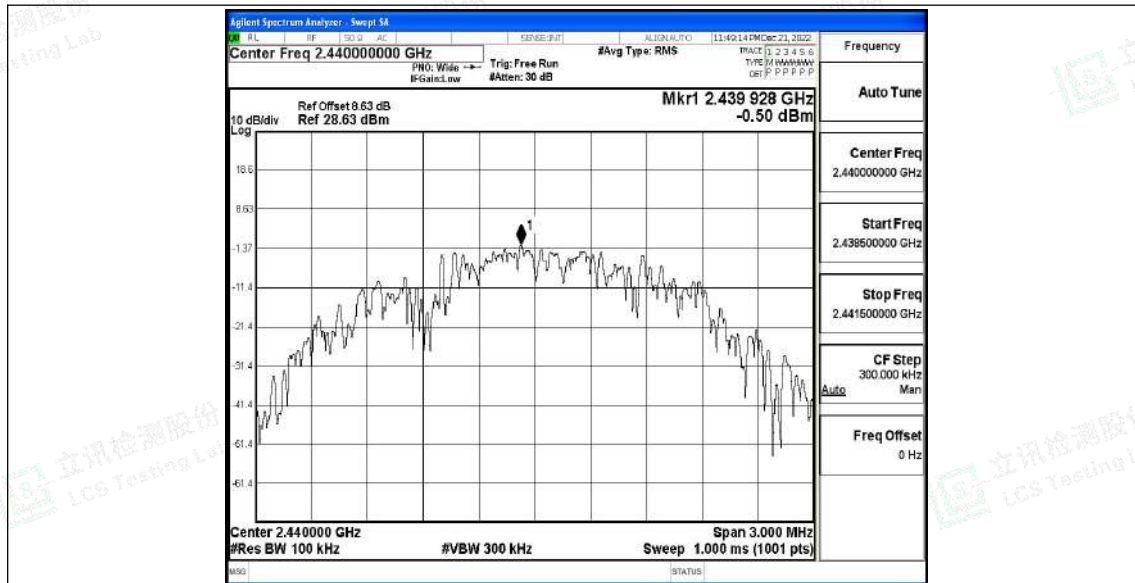


BLE_2M_Ant1_2402_1000~26500

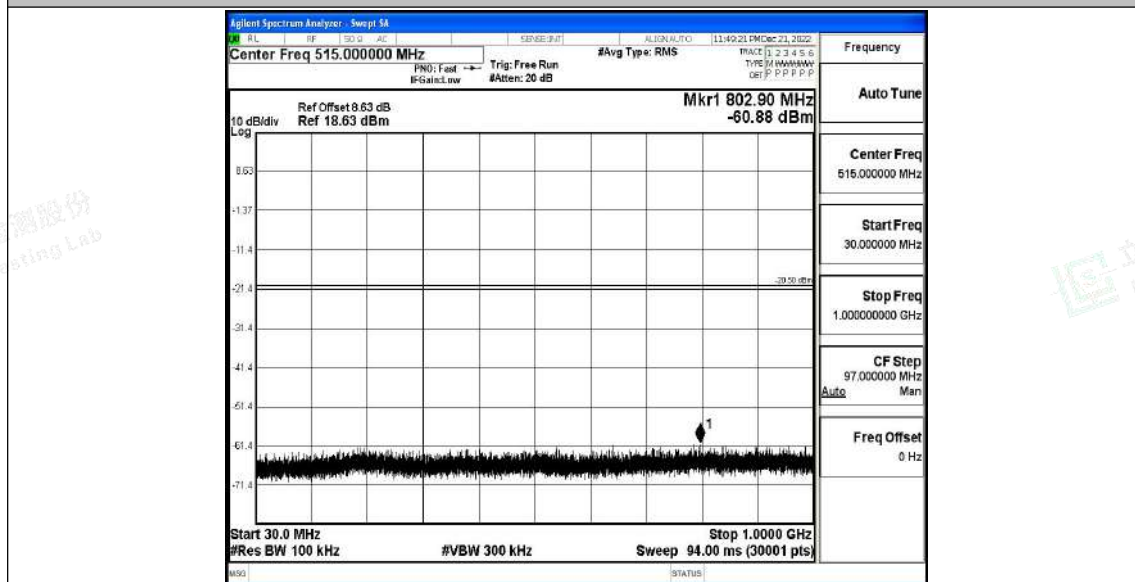


BLE_2M_Ant1_2440_0~Reference



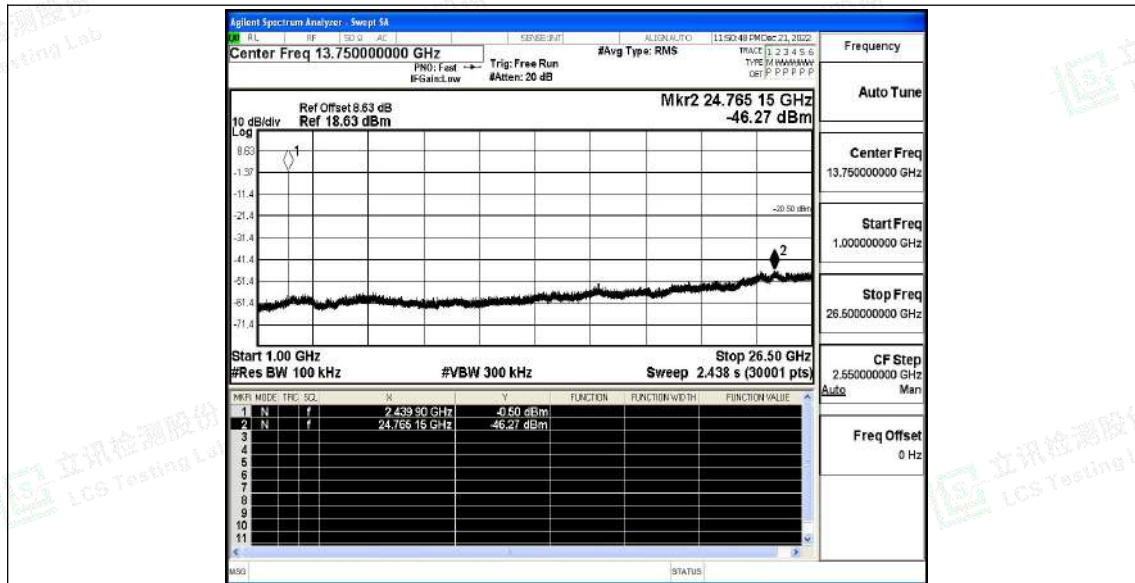


BLE_2M_Ant1_2440_30~1000

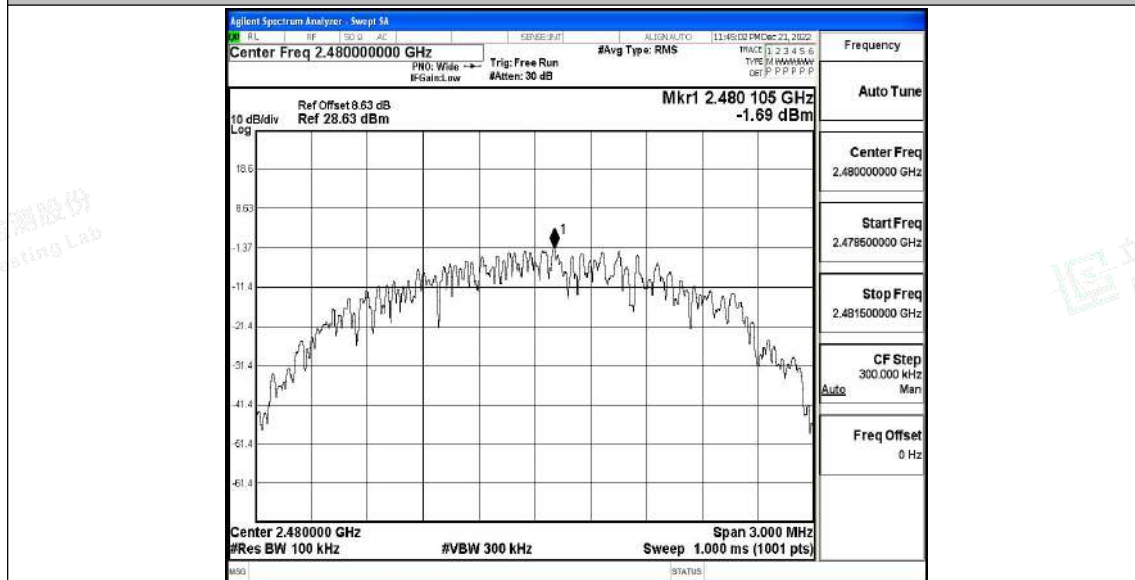


BLE_2M_Ant1_2440_1000~26500



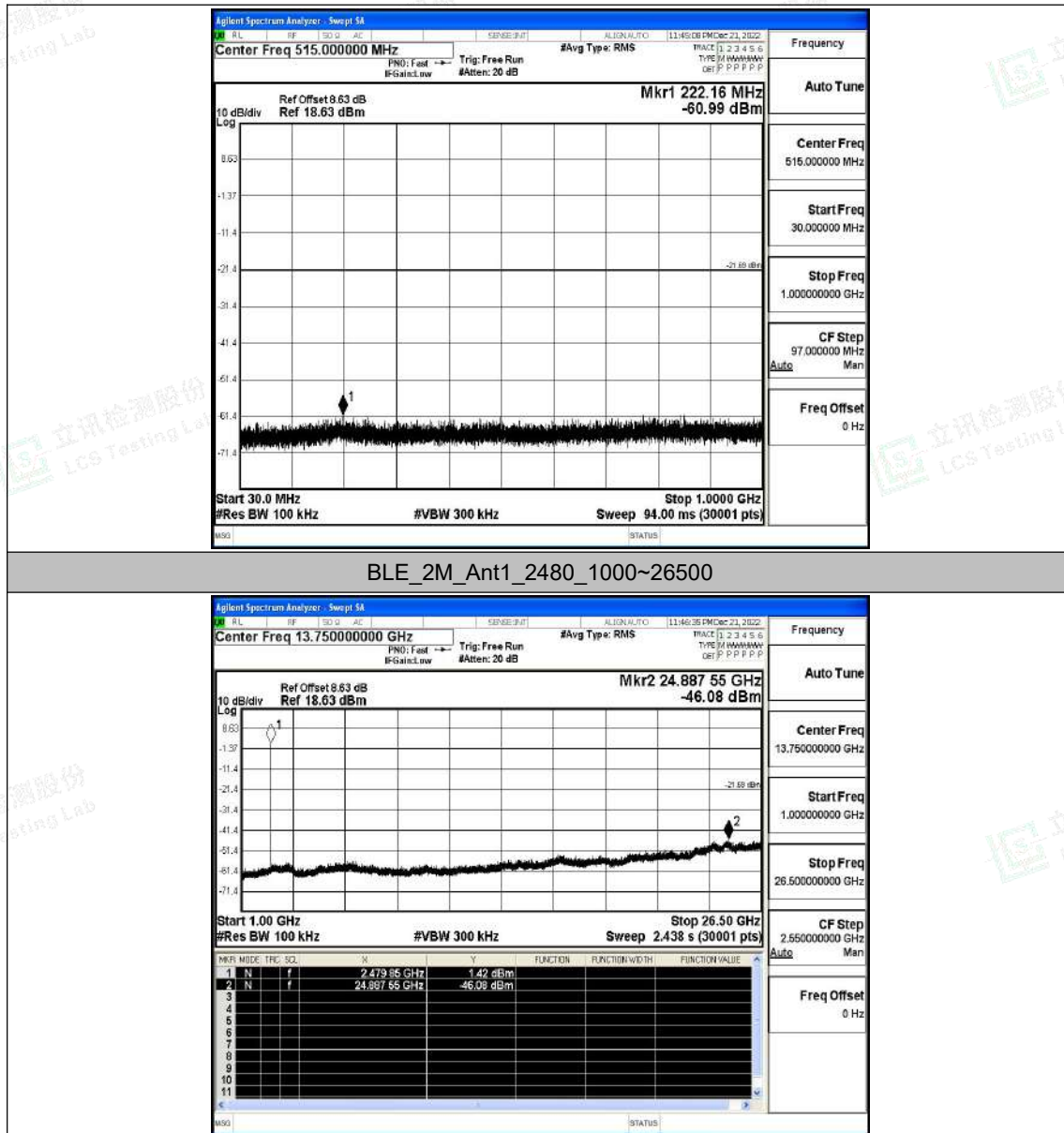


BLE_2M_Ant1_2480_0~Reference



BLE_2M_Ant1_2480_30~1000







B.6 Duty Cycle

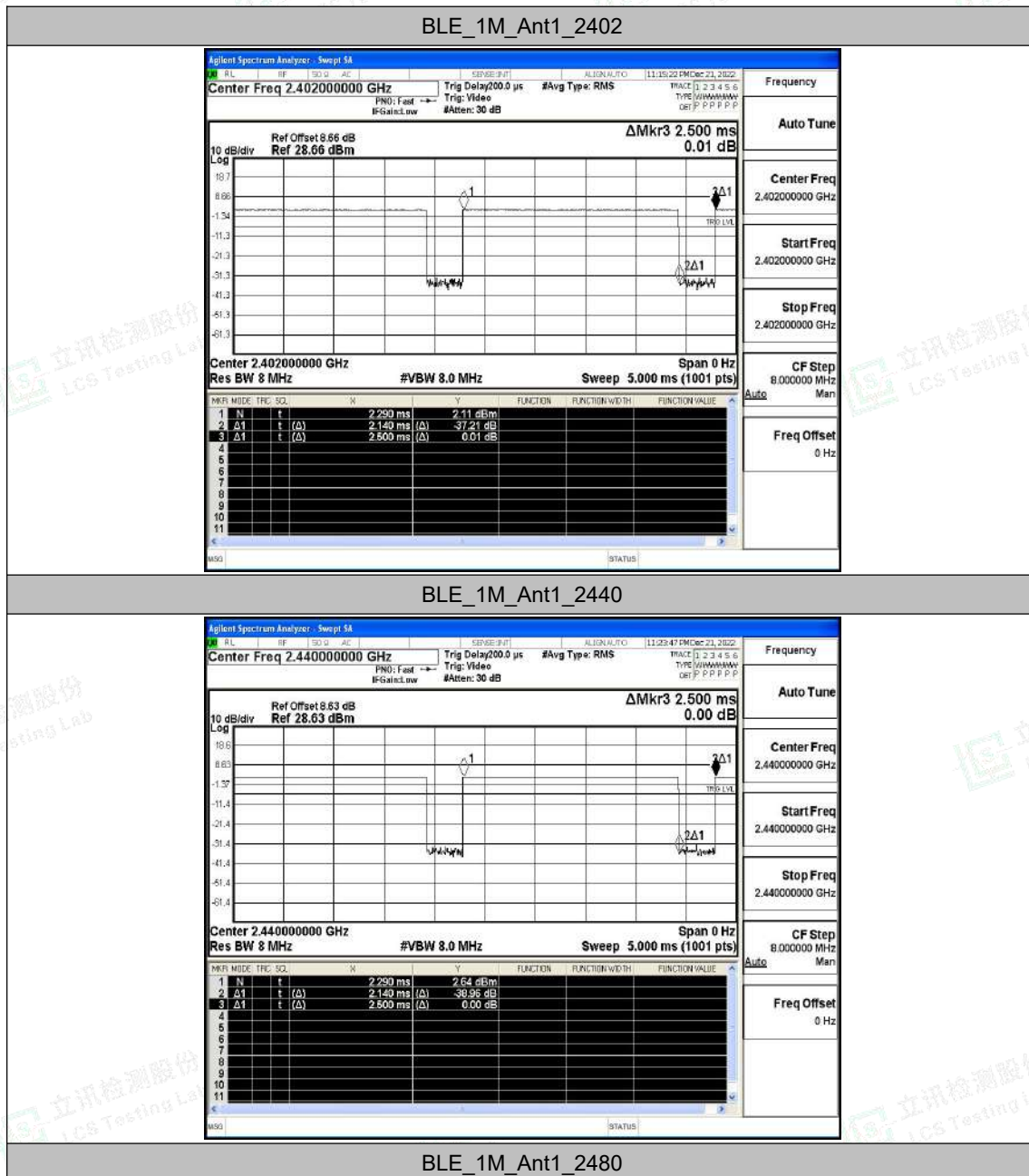
Test Result

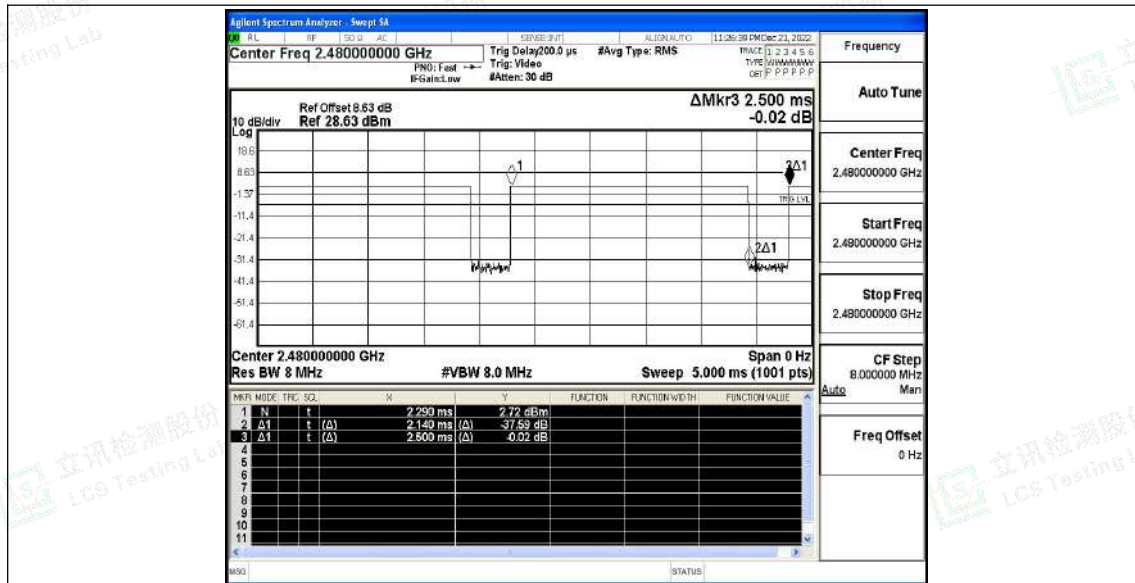
TestMode	Antenna	Channel	ON Time [ms]	Period [ms]	X	DC [%]	xFactor	1/T	Limit	Verdict
BLE_1M	Ant1	2402	2.14	2.50	0.8560	85.60	0.68	0.47	---	PASS
		2440	2.14	2.50	0.8560	85.60	0.68	0.47	---	PASS
		2480	2.14	2.50	0.8560	85.60	0.68	0.47	---	PASS
BLE_2M	Ant1	2402	0.21	0.63	0.3333	33.33	4.77	4.76	---	PASS
		2440	0.21	0.63	0.3333	33.33	4.77	4.76	---	PASS
		2480	0.21	0.63	0.3333	33.33	4.77	4.76	---	PASS



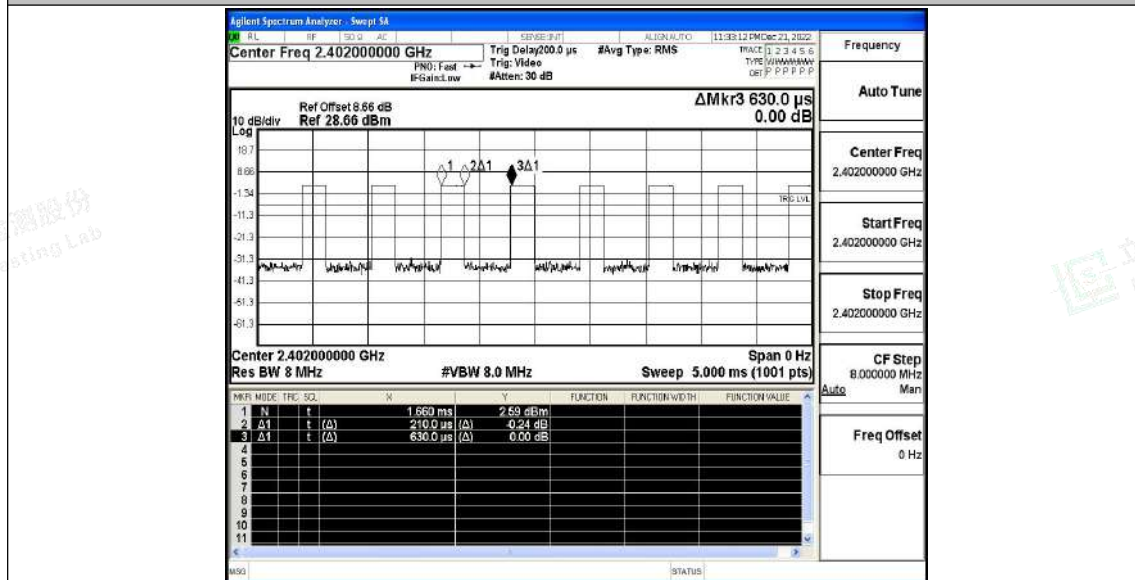


Test Graphs



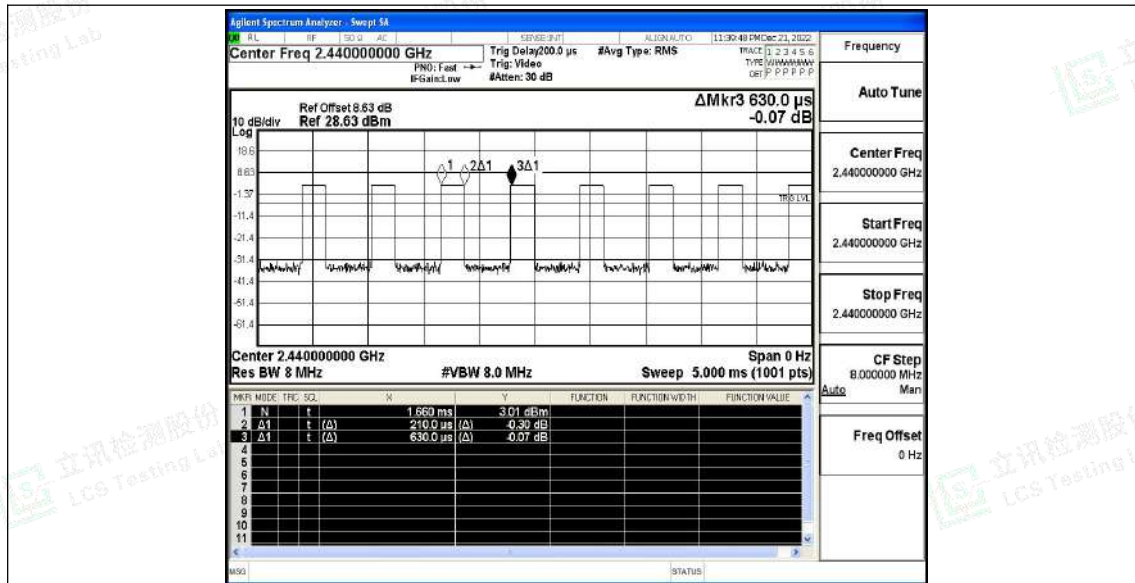


BLE_2M_Ant1_2402

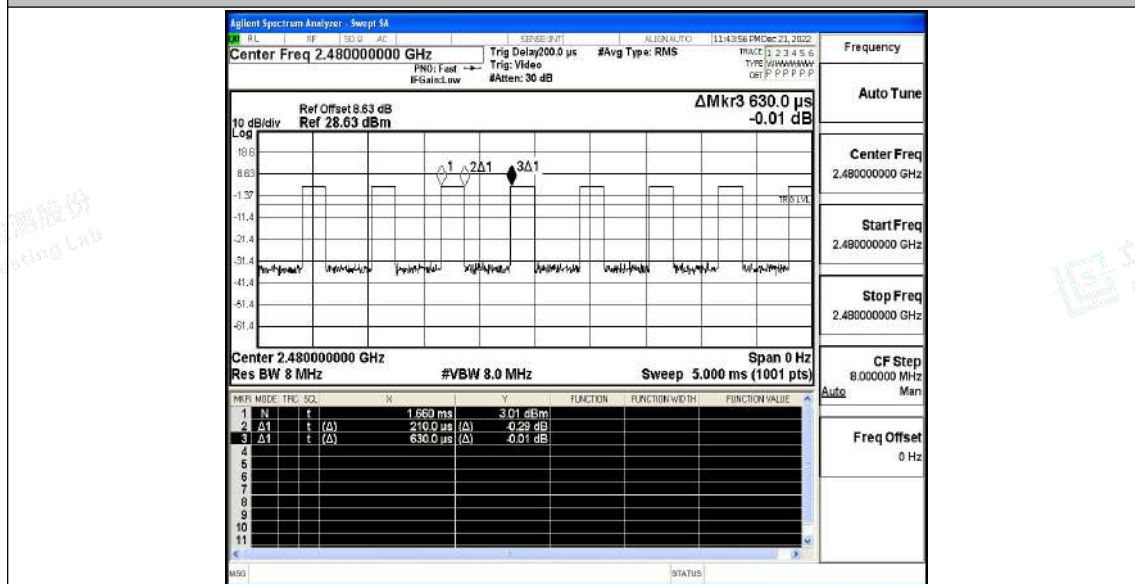


BLE_2M_Ant1_2440





BLE_2M_Ant1_2480





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	-48.27	≤-41.20	46.93	≤54	PASS
				AV	2381.795	-47.65	≤-41.20	47.55	≤54	PASS
				AV	2390.000	-47.82	≤-41.20	47.38	≤54	PASS
				Peak	2310.000	-40.71	≤-21.20	54.49	≤74	PASS
				Peak	2375.705	-37.91	≤-21.20	57.29	≤74	PASS
				Peak	2390.000	-40.75	≤-21.20	54.45	≤74	PASS
		High	2480	AV	2483.500	-46.75	≤-41.20	48.45	≤54	PASS
				AV	2483.520	-46.75	≤-41.20	48.45	≤54	PASS
				AV	2500.000	-47.29	≤-41.20	47.91	≤54	PASS
				Peak	2483.500	-40.54	≤-21.20	54.66	≤74	PASS
				Peak	2486.640	-37.55	≤-21.20	57.65	≤74	PASS
				Peak	2500.000	-40.22	≤-21.20	54.98	≤74	PASS
BLE_2M	Ant1	Low	2402	AV	2310.000	-47.25	≤-41.20	47.95	≤54	PASS
				AV	2385.470	-46.47	≤-41.20	48.73	≤54	PASS
				AV	2390.000	-46.64	≤-41.20	48.56	≤54	PASS
				Peak	2310.000	-39.99	≤-21.20	55.21	≤74	PASS
				Peak	2379.905	-37.77	≤-21.20	57.43	≤74	PASS
				Peak	2390.000	-40.3	≤-21.20	54.90	≤74	PASS
		High	2480	AV	2483.500	-44.49	≤-41.20	50.71	≤54	PASS
				AV	2483.520	-44.49	≤-41.20	50.71	≤54	PASS
				AV	2500.000	-46.45	≤-41.20	48.75	≤54	PASS
				Peak	2483.500	-39.13	≤-21.20	56.07	≤74	PASS
				Peak	2490.240	-37.14	≤-21.20	58.06	≤74	PASS
				Peak	2500.000	-40.12	≤-21.20	55.08	≤74	PASS

Note:

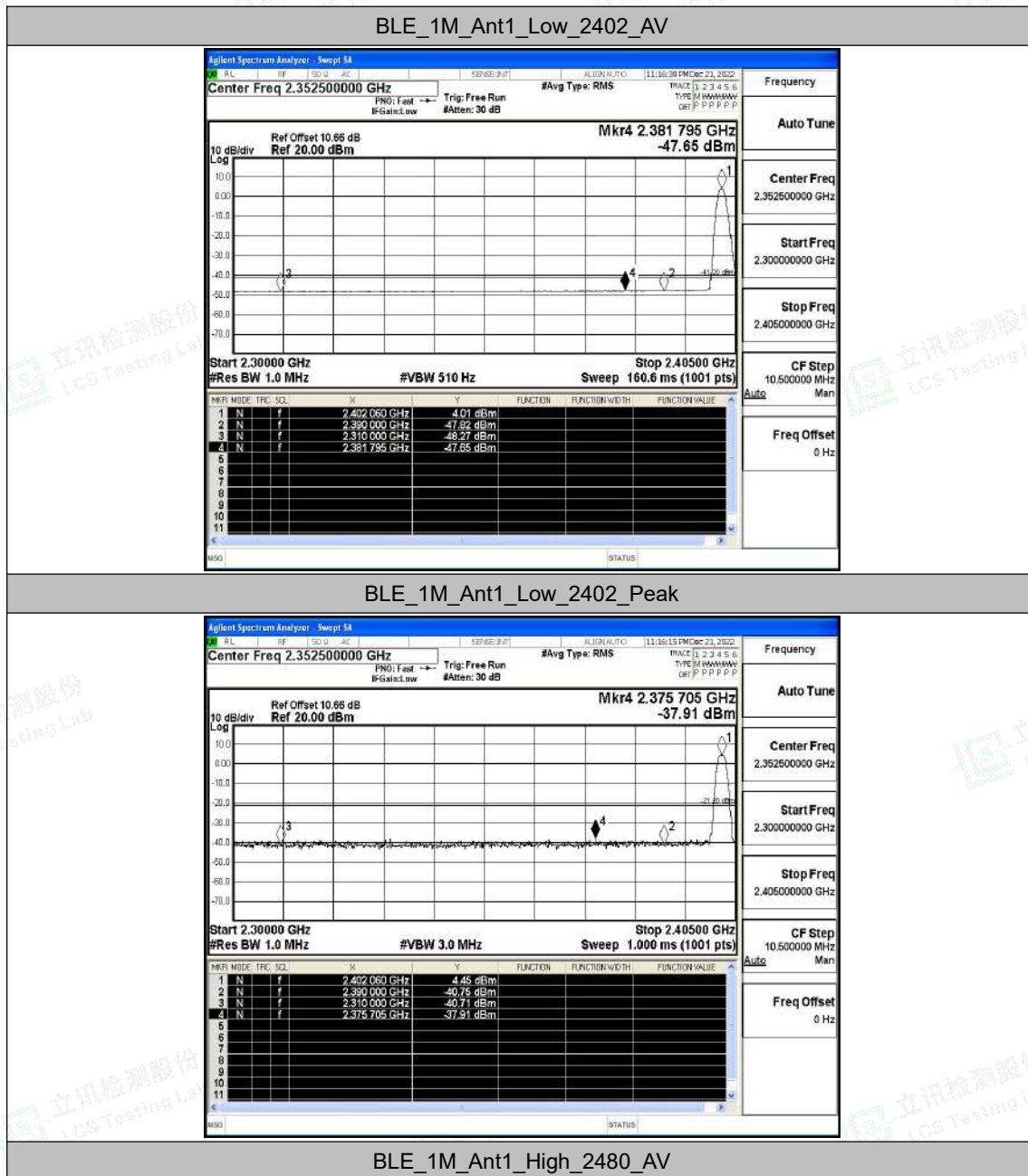
1. The Antenna Gain is compensated in the graph.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

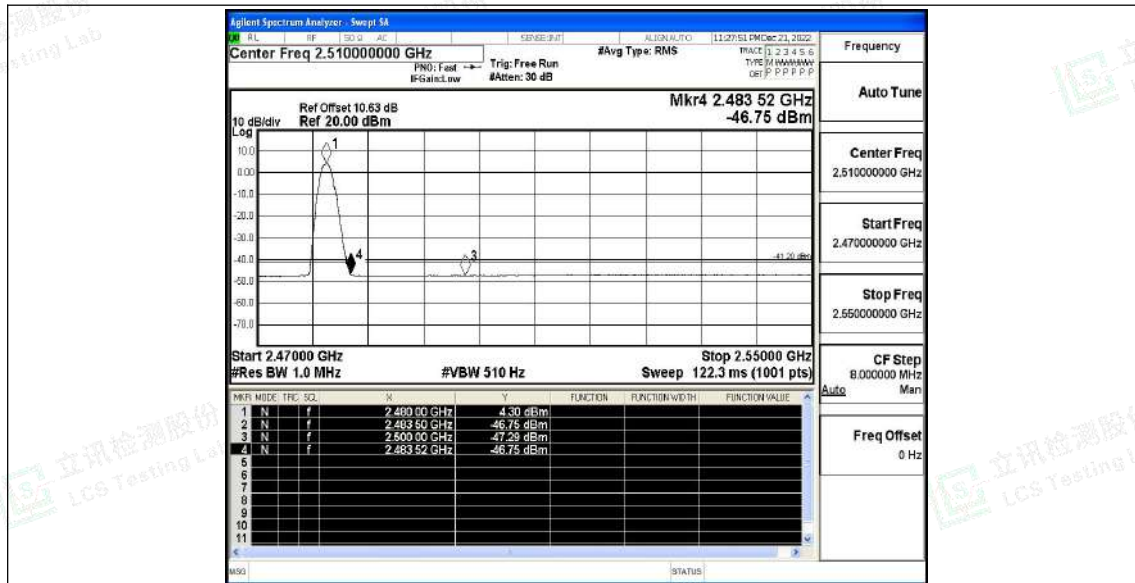


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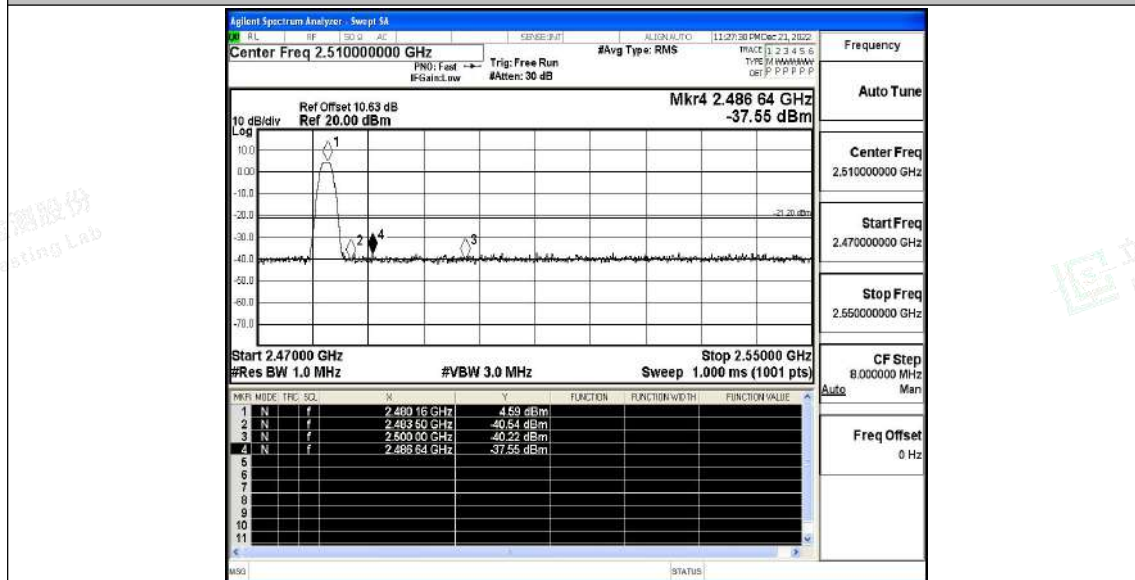


Test Graphs



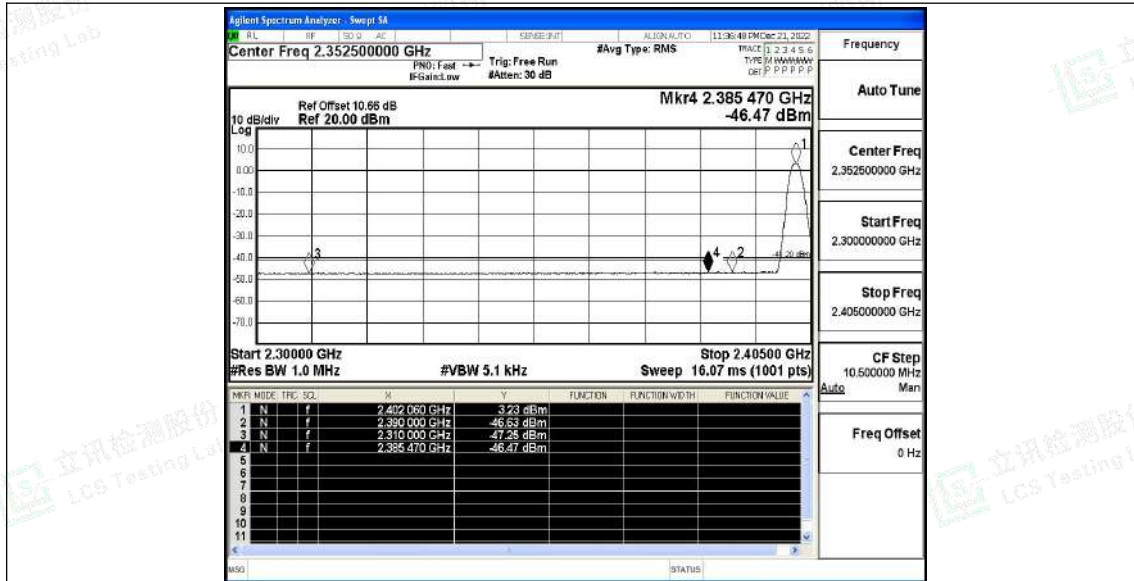


BLE_1M_Ant1_High_2480_Peak

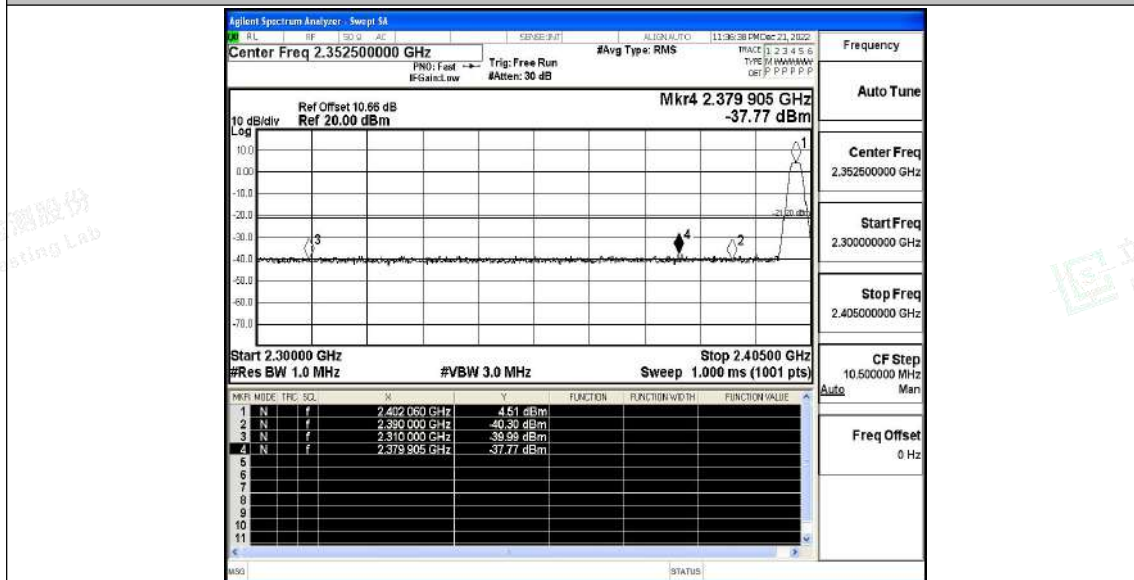


BLE_2M_Ant1_Low_2402_AV



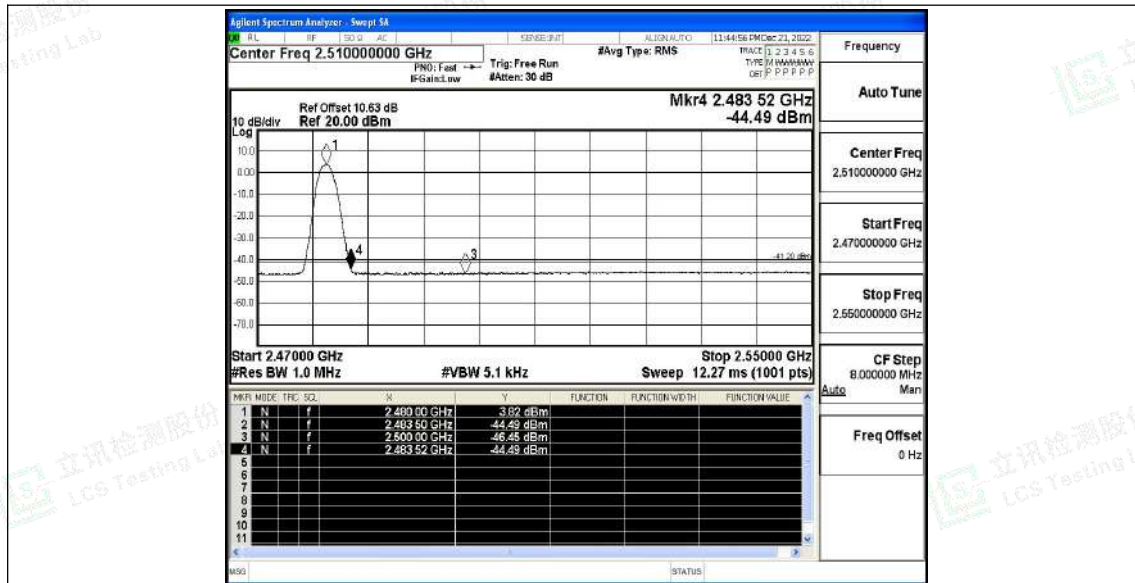


BLE_2M_Ant1_Low_2402_Peak



BLE_2M_Ant1_High_2480_AV





BLE_2M_Ant1_High_2480_Peak

