



Appendix A

RF Test Data for BLE (Conducted Measurement)

Product Name: Fly12 Sport

Test Model: CE123

Environmental Conditions

Temperature:	23.8° C
Relative Humidity:	52.2%
ATM Pressure:	100.0 kPa
Test Engineer:	Nick Peng
Supervised by:	Ling Zhu





A.1 6dB Bandwidth

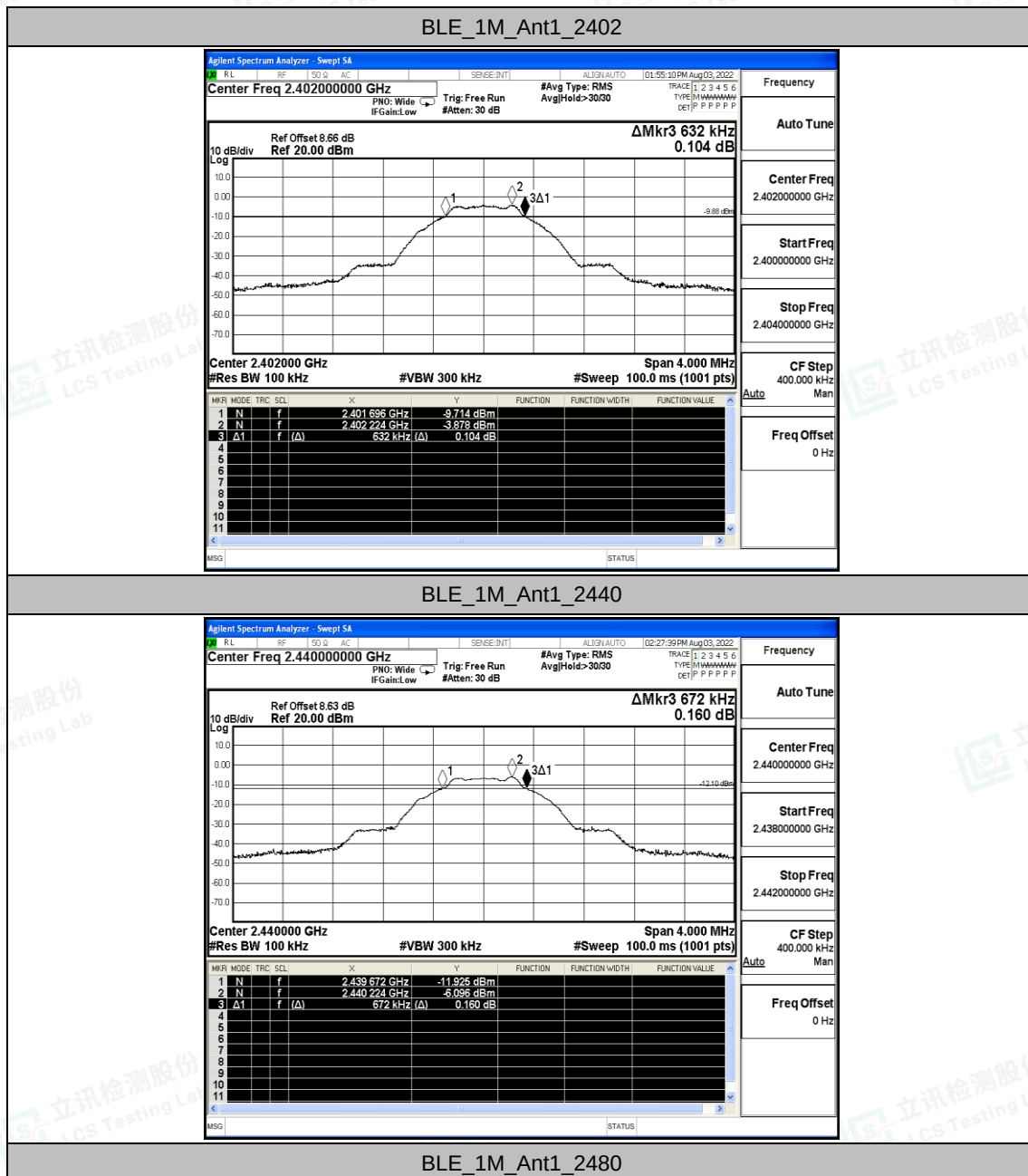
Test Result

TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.632	2401.696	2402.328	0.5	PASS
		2440	0.672	2439.672	2440.344	0.5	PASS
		2480	0.680	2479.668	2480.348	0.5	PASS
BLE_2M	Ant1	2402	1.256	2401.396	2402.652	0.5	PASS
		2440	1.268	2439.392	2440.660	0.5	PASS
		2480	1.304	2479.360	2480.664	0.5	PASS





Test Graphs

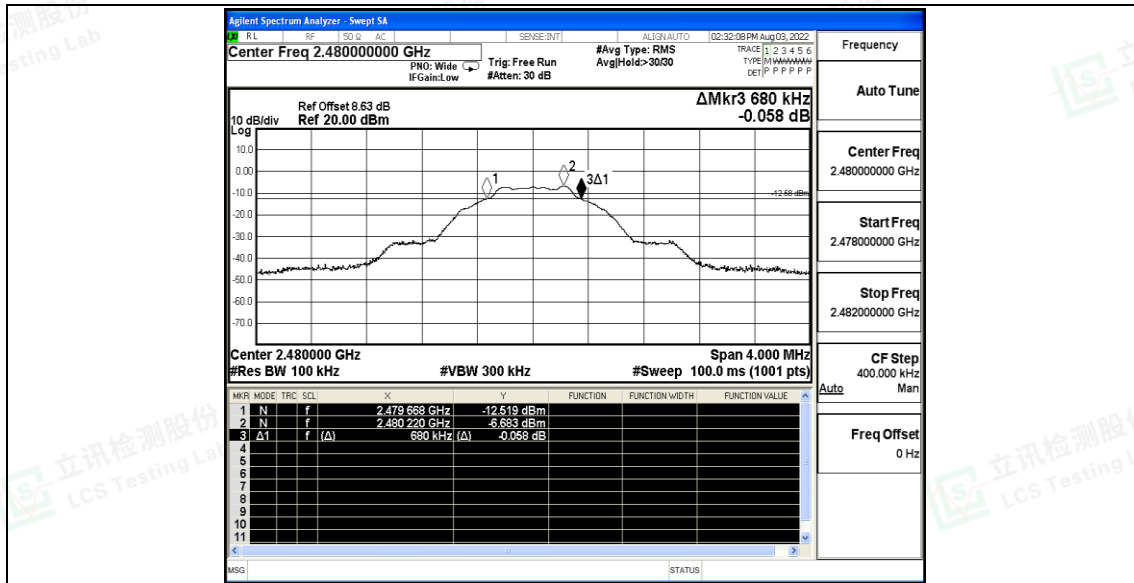


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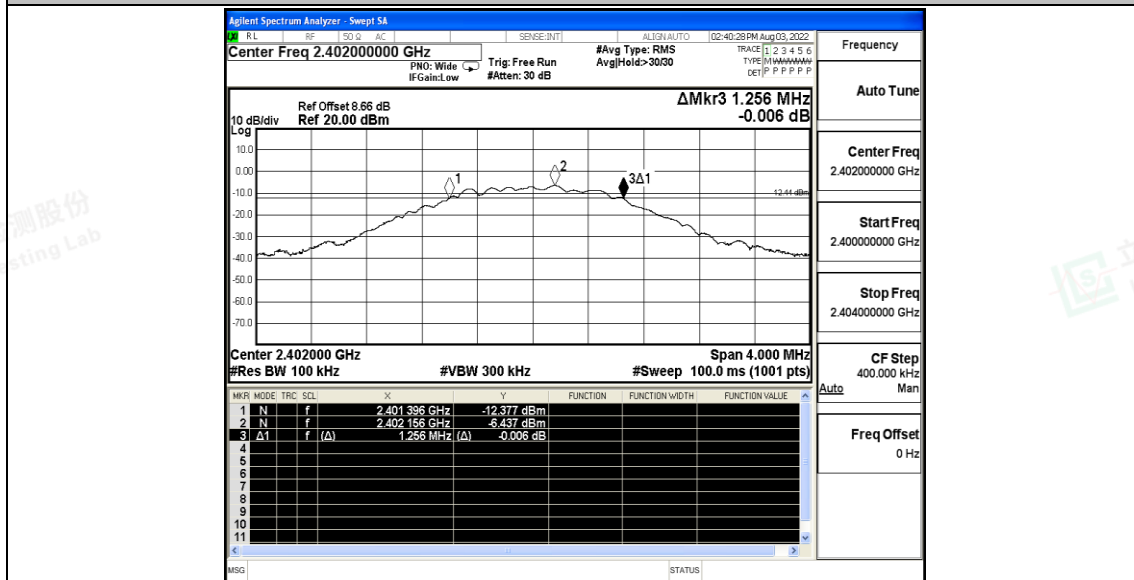
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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BLE_2M_Ant1_2402



BLE_2M_Ant1_2440

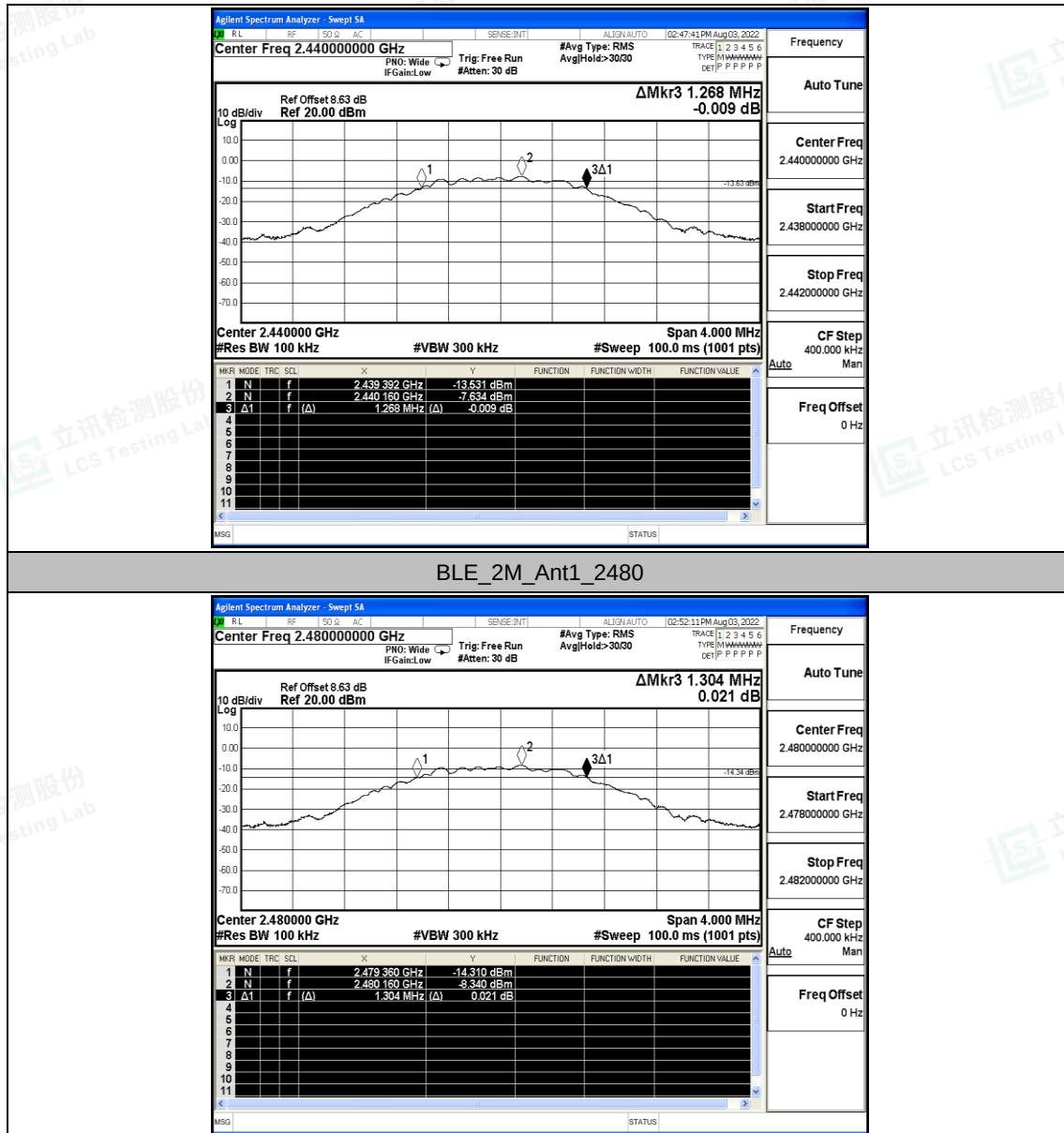


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A.2 Occupied Channel Bandwidth

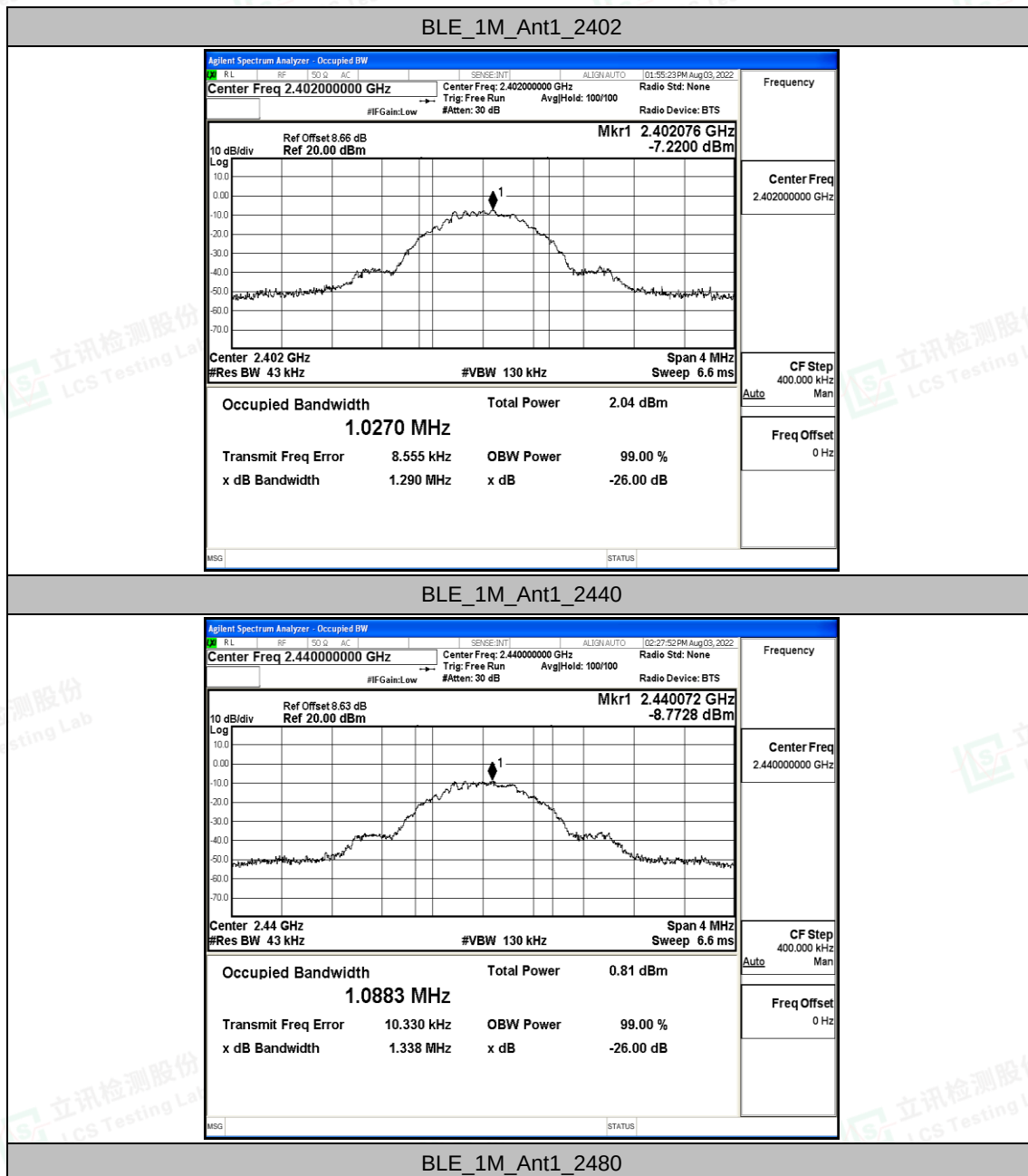
Test Result

TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0270	2401.495	2402.522	---	---
		2440	1.0883	2439.466	2440.554	---	---
		2480	1.1019	2479.457	2480.559	---	---
BLE_2M	Ant1	2402	2.0230	2400.995	2403.018	---	---
		2440	2.0890	2438.970	2441.059	---	---
		2480	2.1259	2478.957	2481.083	---	---





Test Graphs

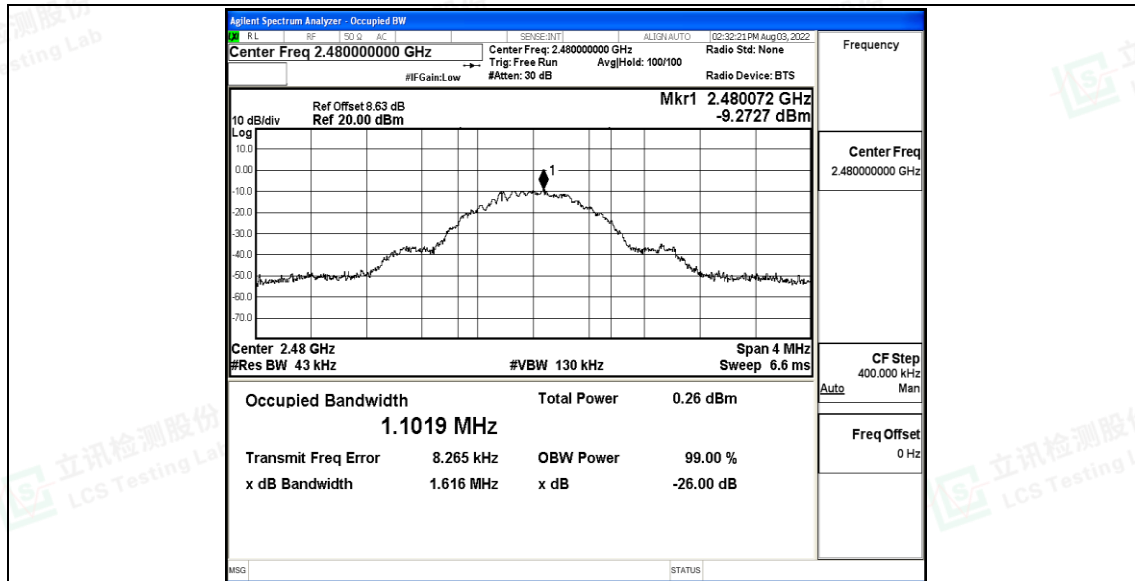


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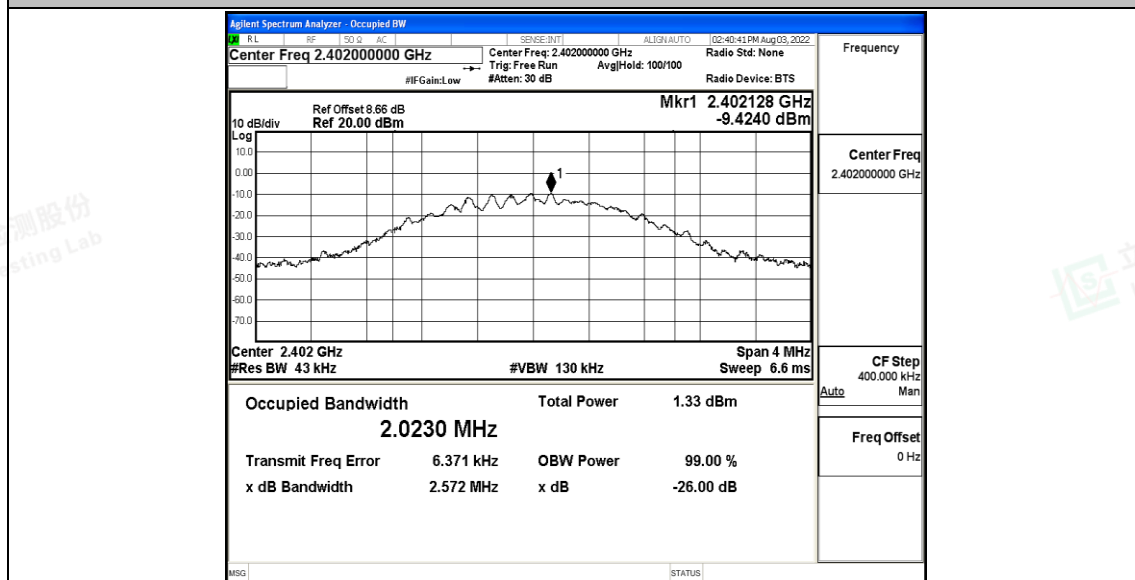
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BLE_2M_Ant1_2402



BLE_2M_Ant1_2440

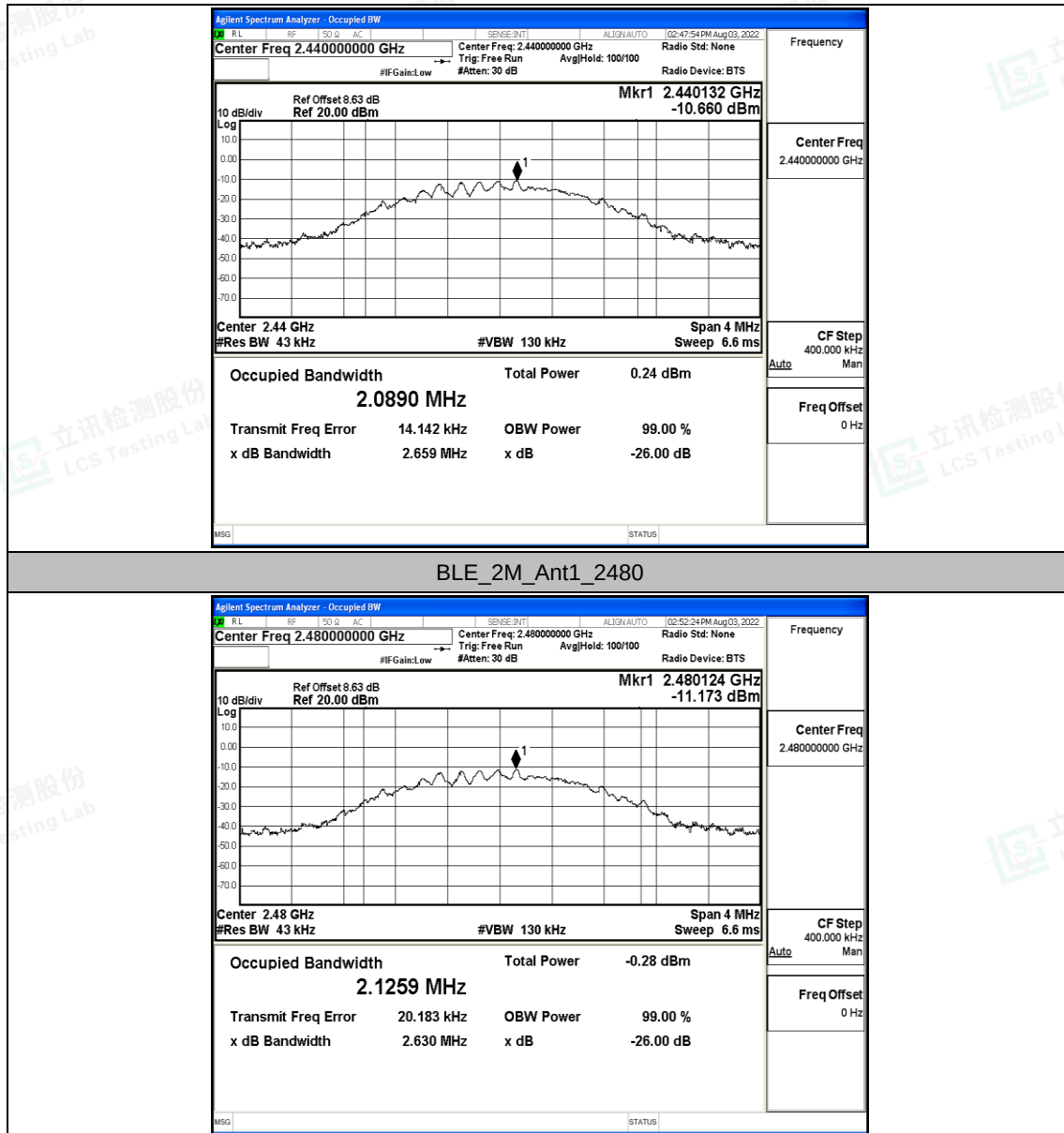


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A.3 Maximum conducted output power

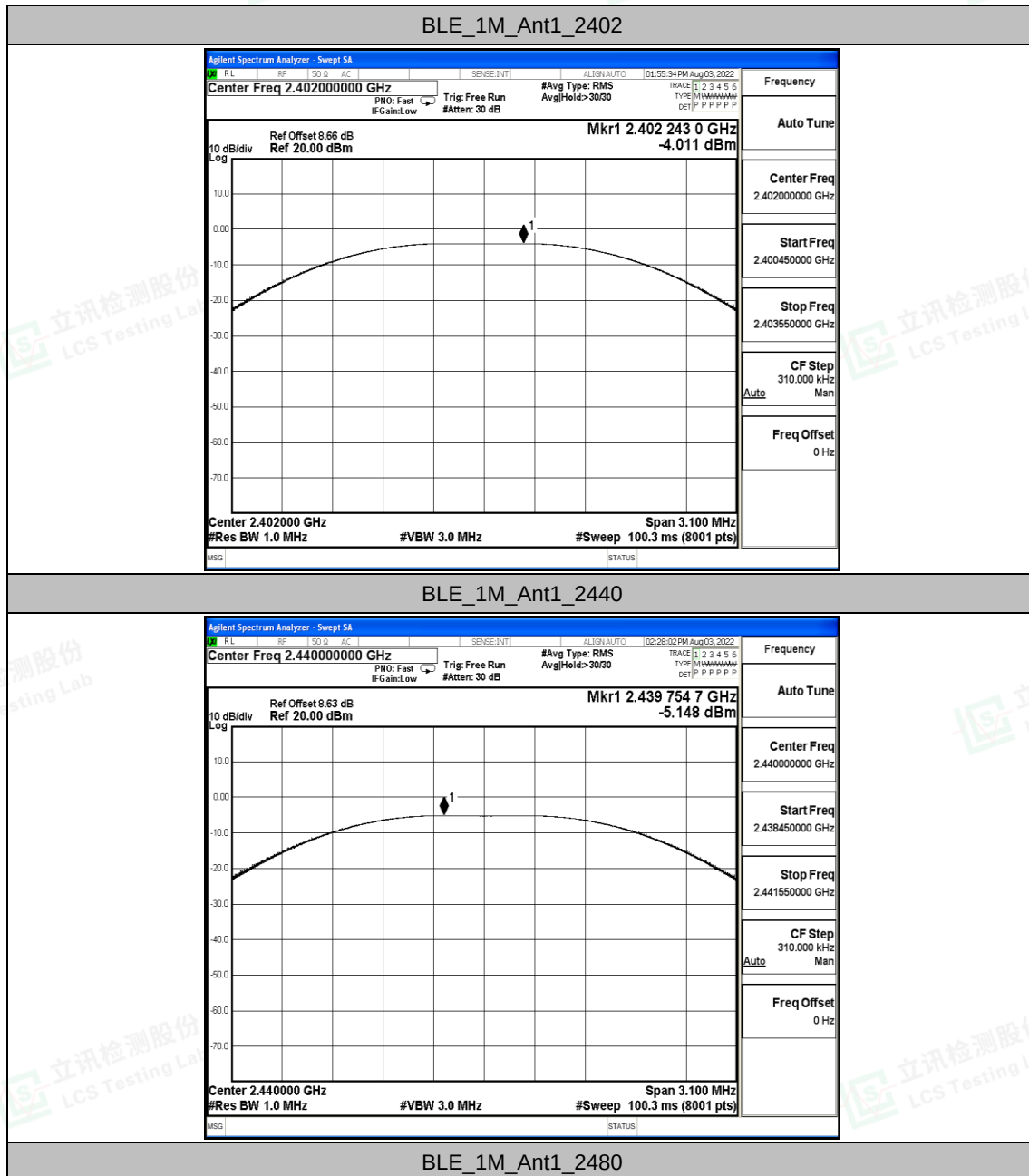
Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	-4.01	≤30	PASS
		2440	-5.15	≤30	PASS
		2480	-5.72	≤30	PASS
BLE_2M	Ant1	2402	-3.99	≤30	PASS
		2440	-5.02	≤30	PASS
		2480	-4.29	≤30	PASS





Test Graphs

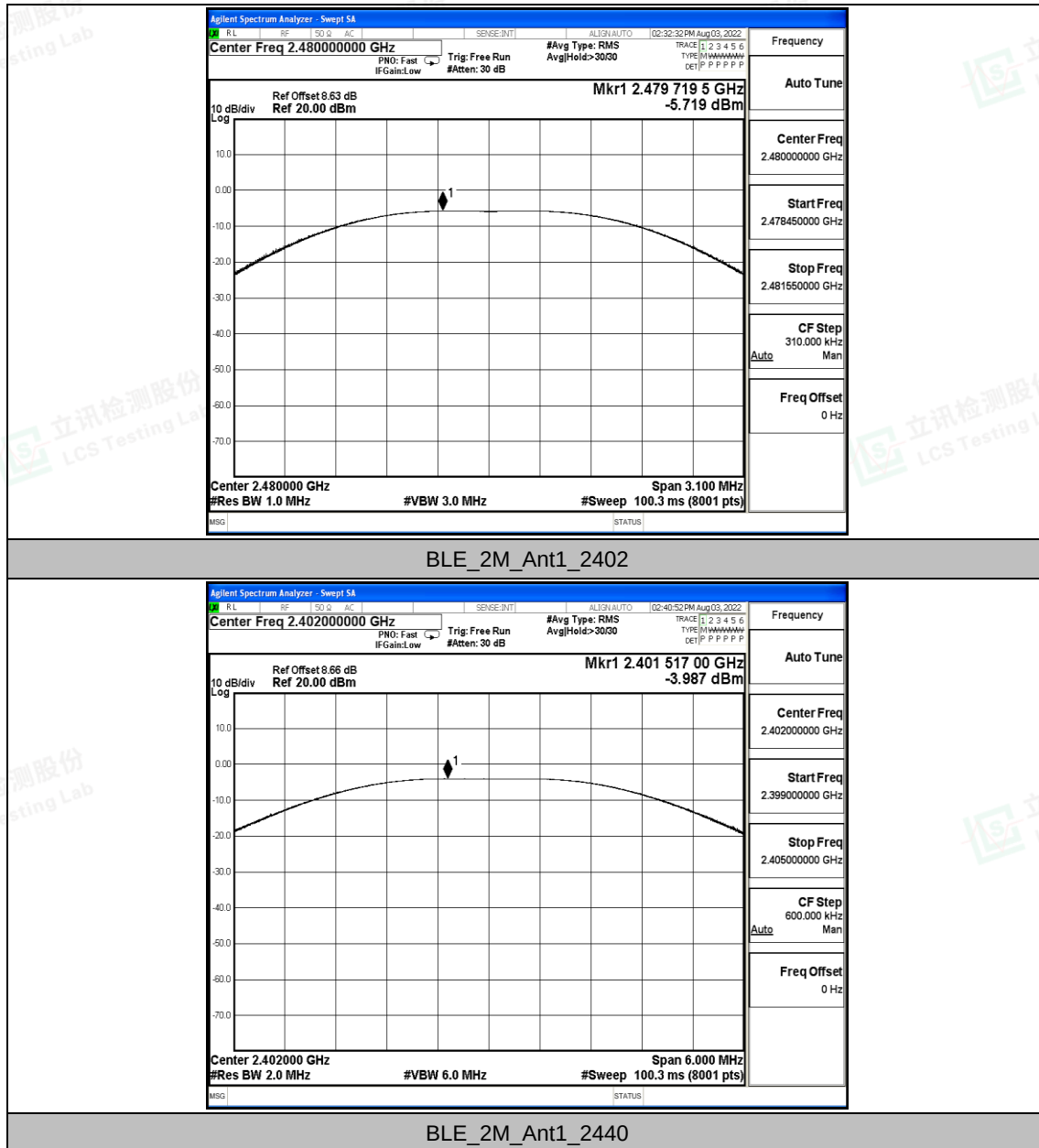


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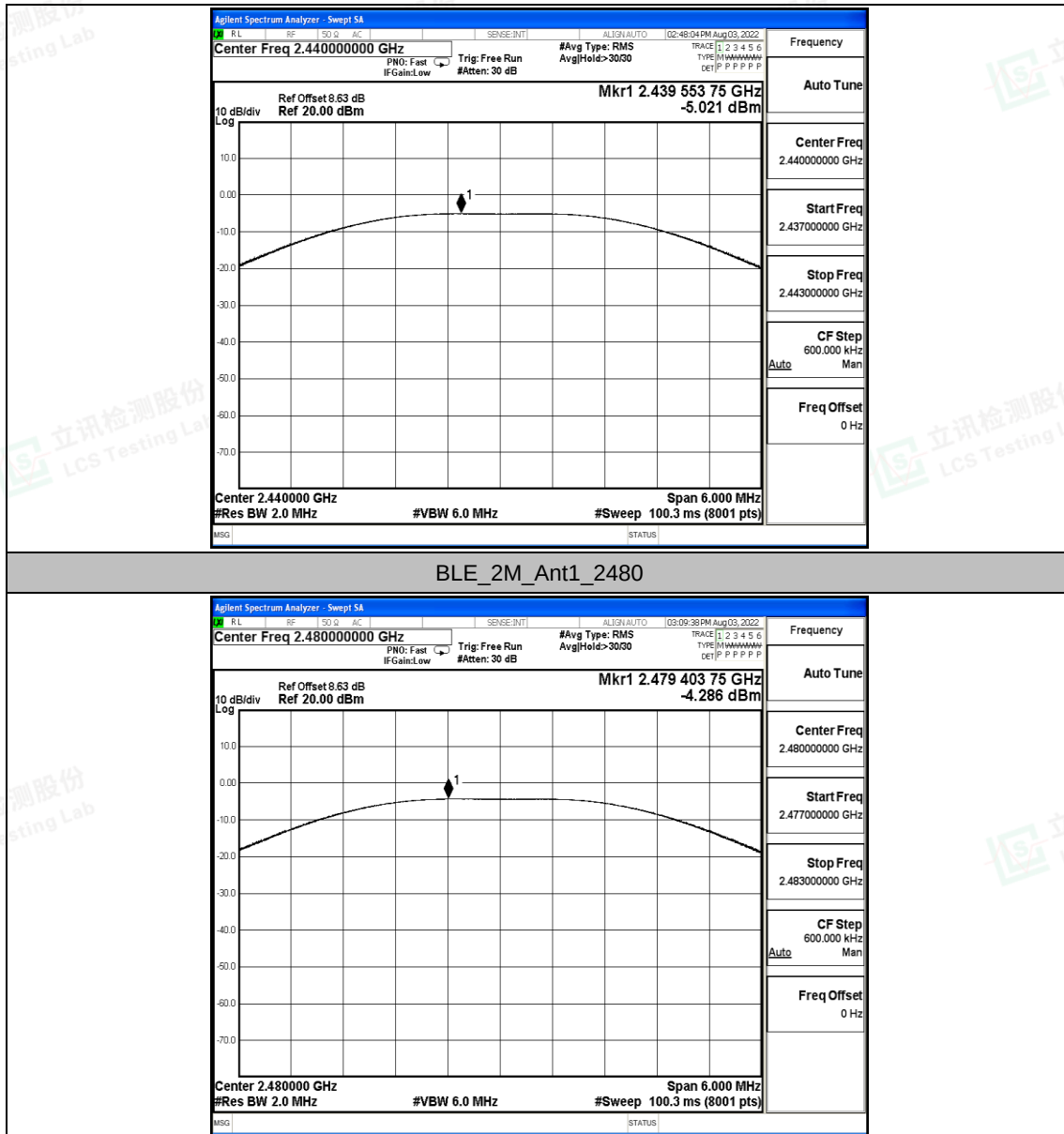


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A.4 Maximum power spectral density

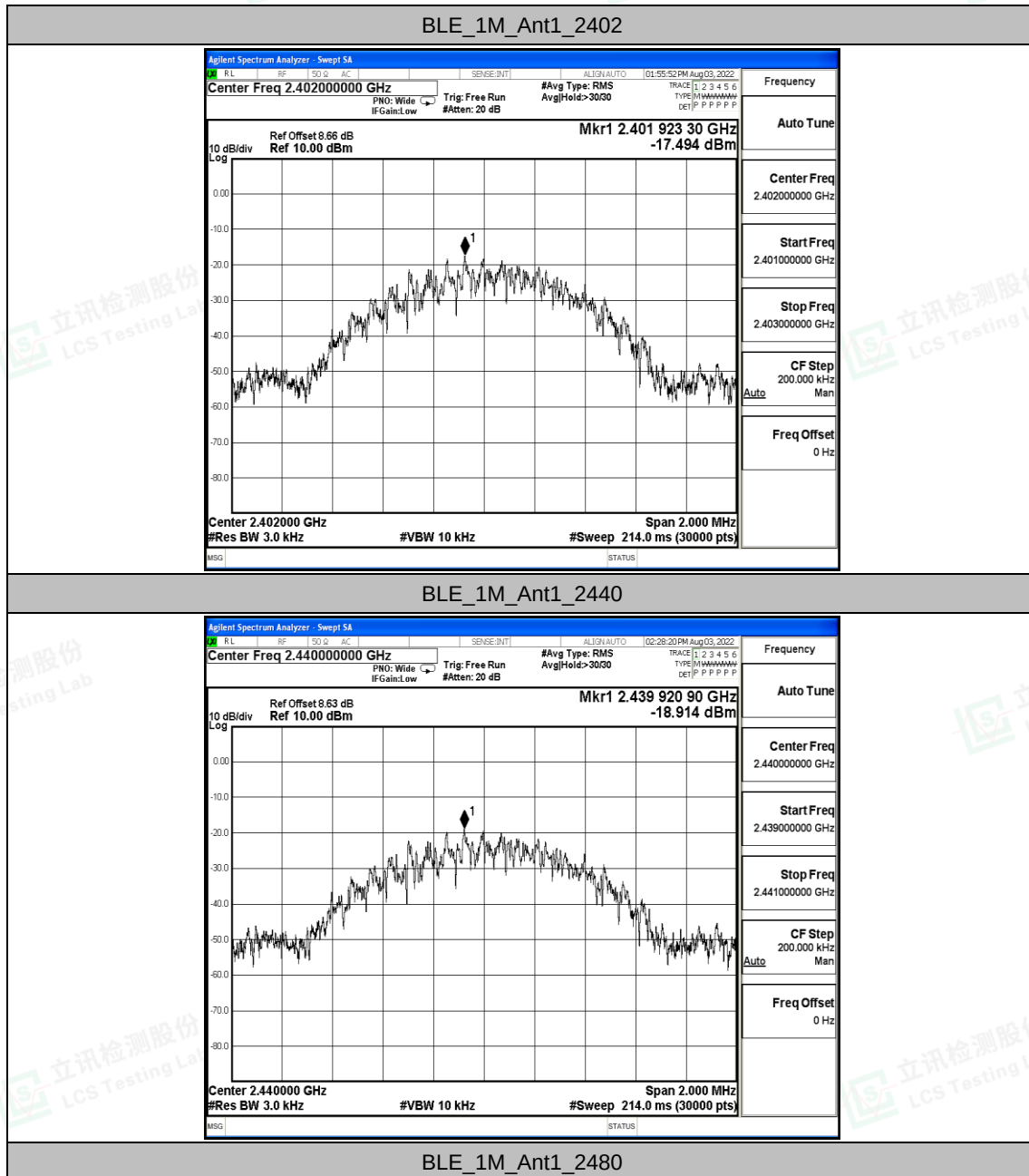
Test Result

TestMode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-17.49	≤8.00	PASS
		2440	-18.91	≤8.00	PASS
		2480	-19.54	≤8.00	PASS
BLE_2M	Ant1	2402	-20.15	≤8.00	PASS
		2440	-21.36	≤8.00	PASS
		2480	-21.97	≤8.00	PASS





Test Graphs

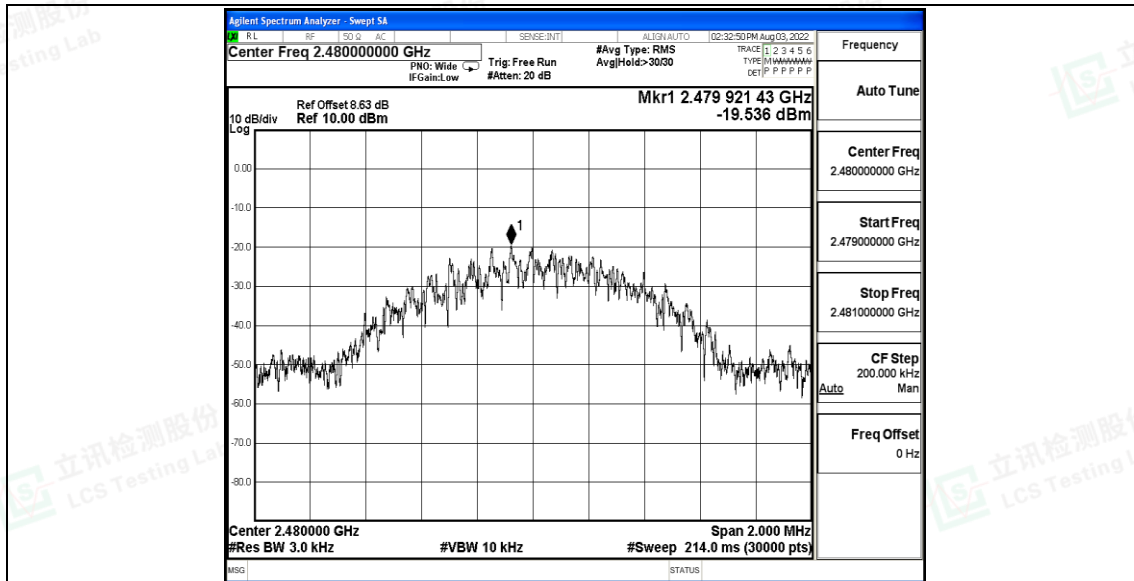


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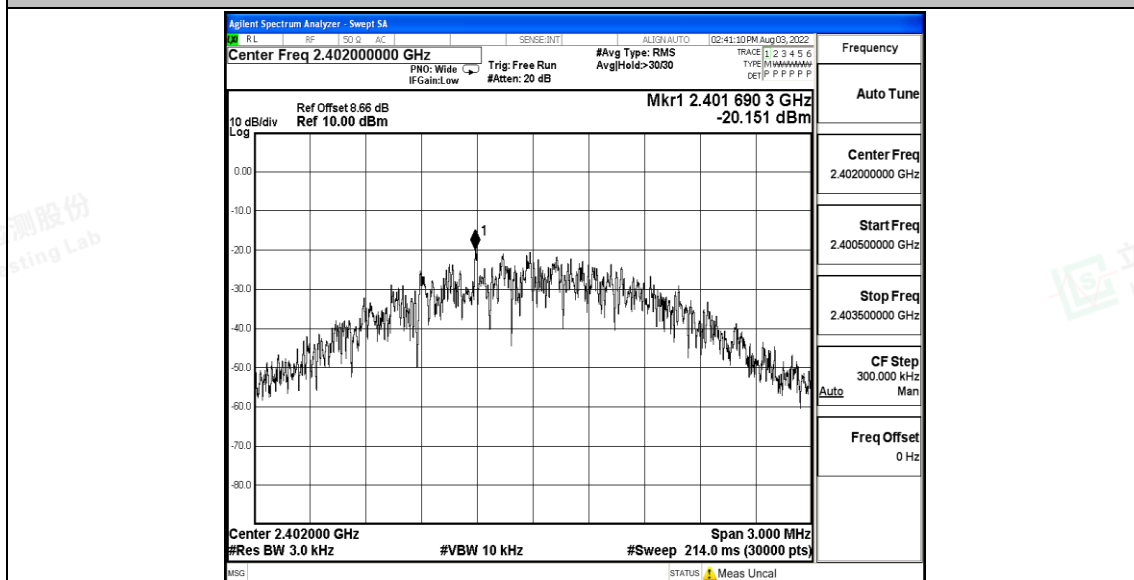
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BLE_2M_Ant1_2402



BLE_2M_Ant1_2440

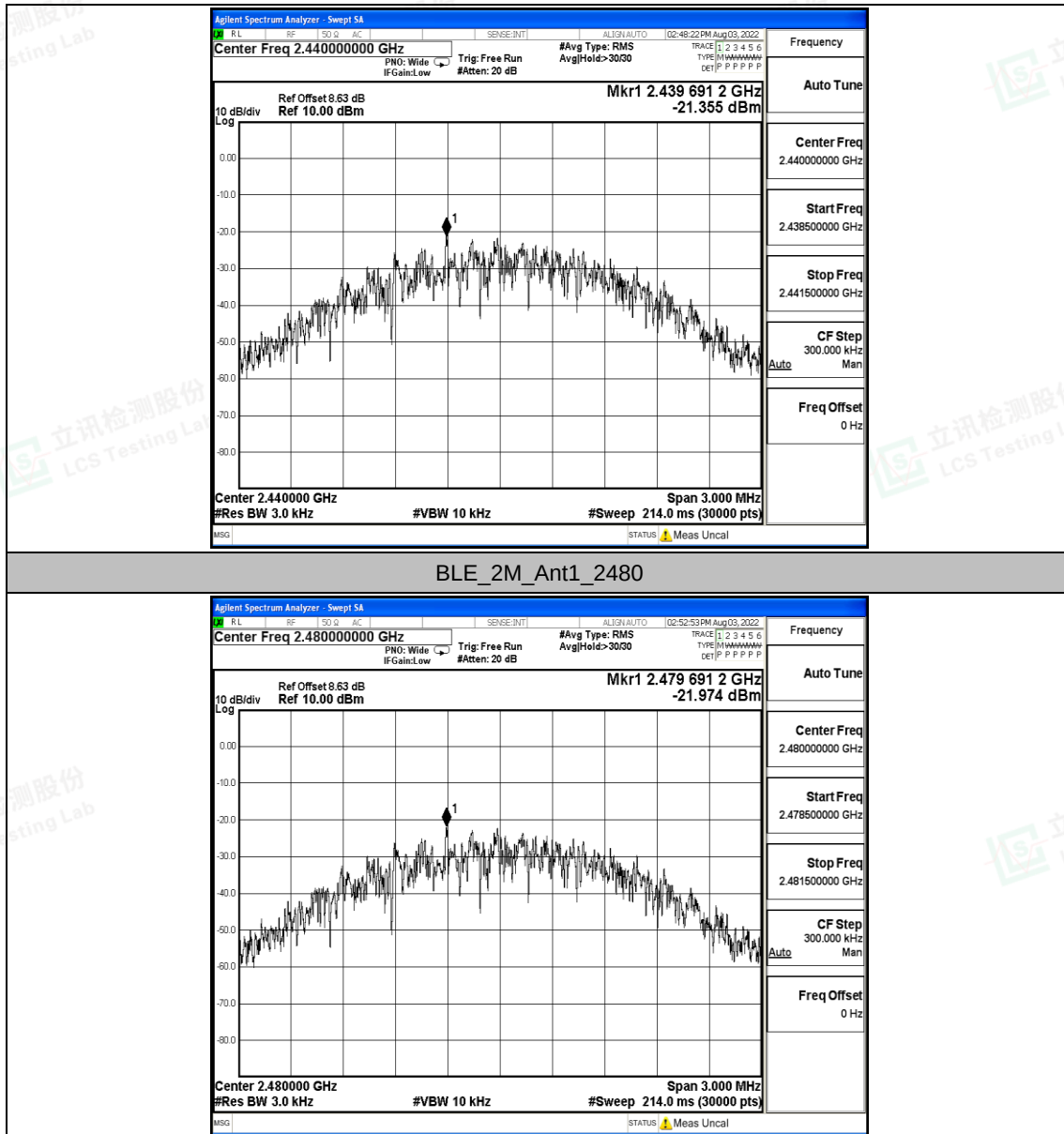


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A.5 Band edge measurements

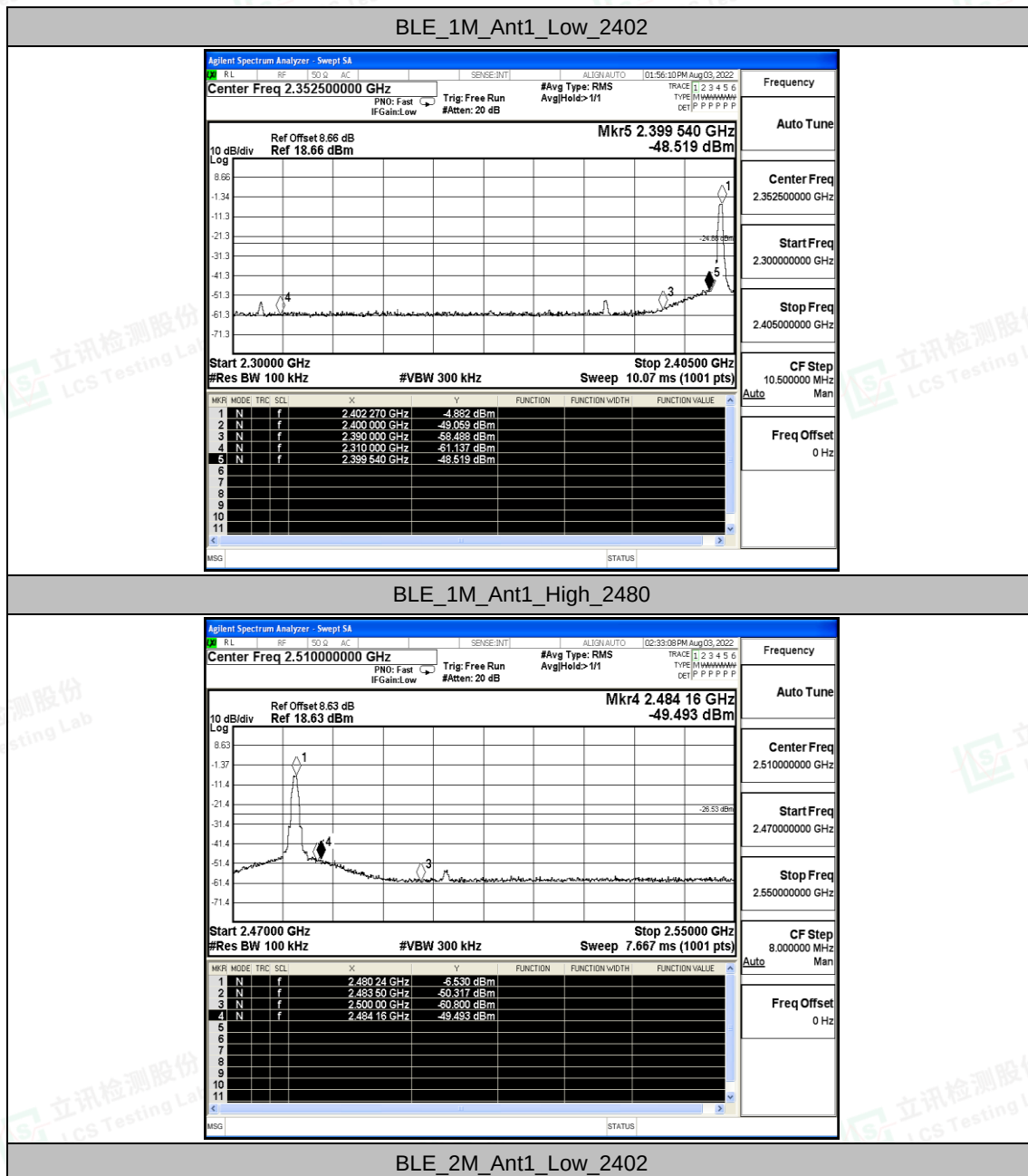
Test Result

TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	-4.88	-48.52	≤-24.88	PASS
		High	2480	-6.53	-49.49	≤-26.53	PASS
BLE_2M	Ant1	Low	2402	-5.76	-36.9	≤-25.76	PASS
		High	2480	-7.64	-41.23	≤-27.64	PASS





Test Graphs

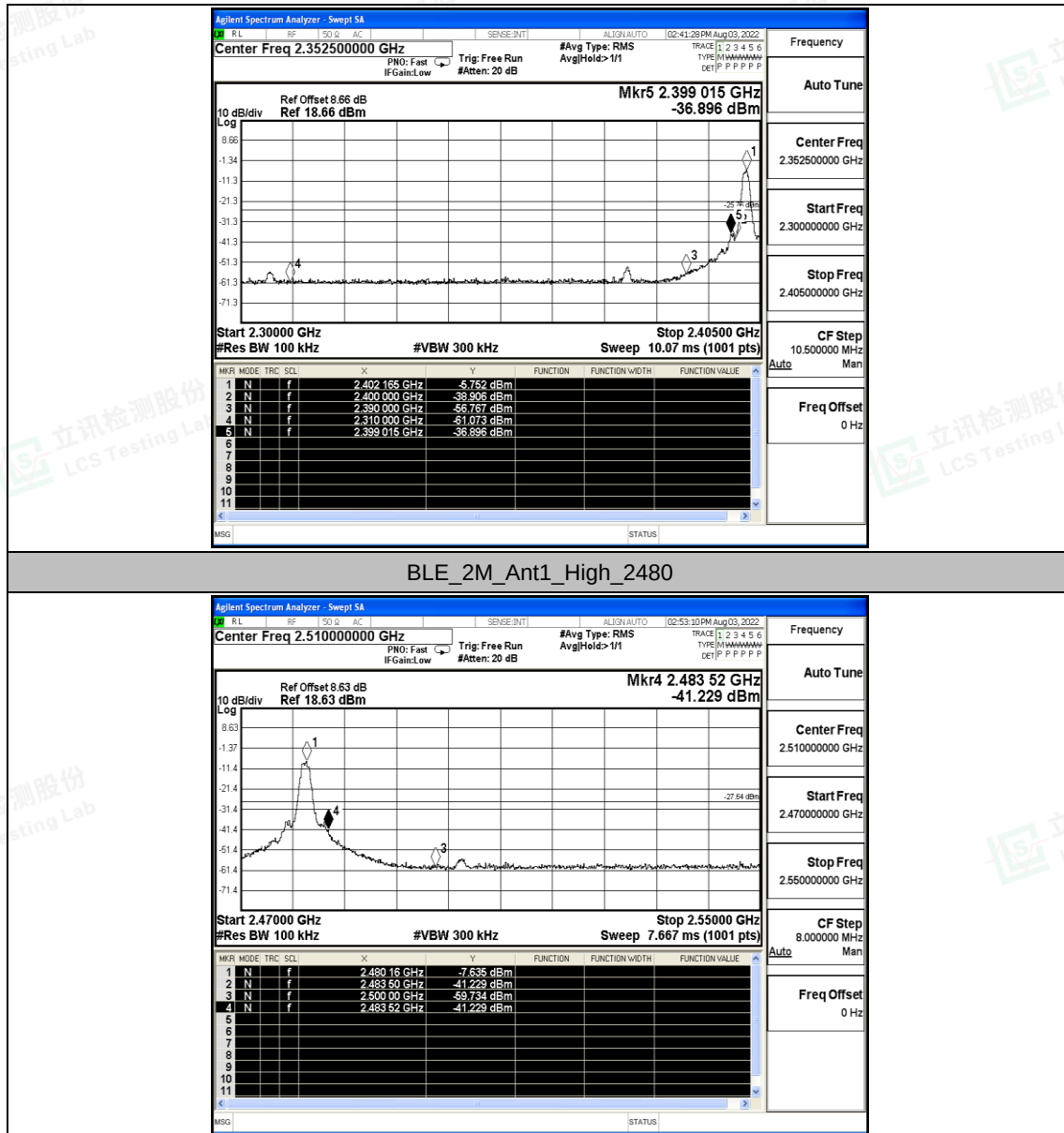


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A.6 Conducted Spurious Emission

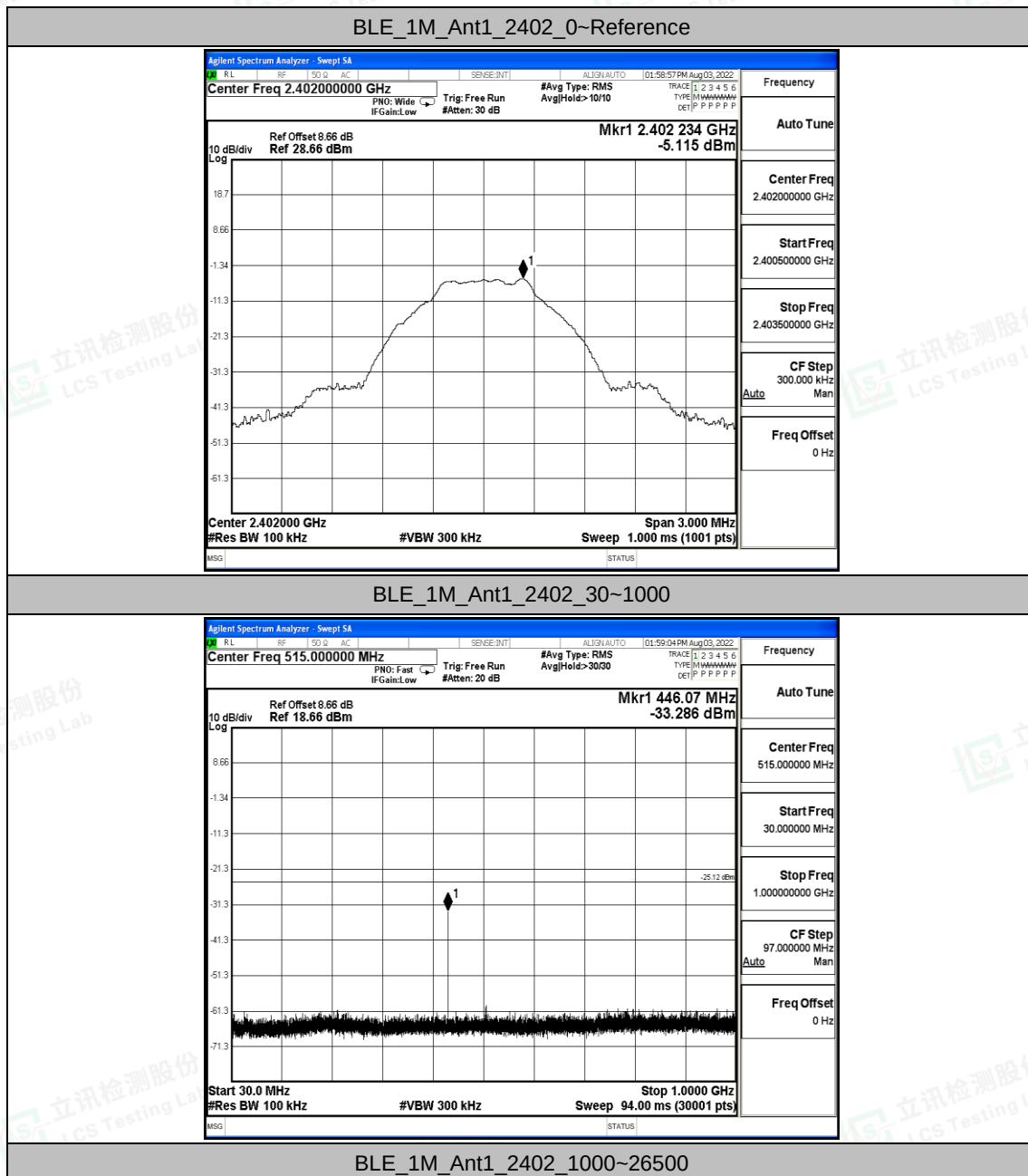
Test Result

TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	-5.12	-5.12	---	PASS
			30~1000	-5.12	-33.29	≤-25.12	PASS
			1000~26500	-5.12	-46.33	≤-25.12	PASS
		2440	Reference	-6.14	-6.14	---	PASS
			30~1000	-6.14	-51.45	≤-26.14	PASS
			1000~26500	-6.14	-46.22	≤-26.14	PASS
		2480	Reference	-6.67	-6.67	---	PASS
			30~1000	-6.67	-61.02	≤-26.67	PASS
			1000~26500	-6.67	-45.34	≤-26.67	PASS
BLE_2M	Ant1	2402	Reference	-6.36	-6.36	---	PASS
			30~1000	-6.36	-59.88	≤-26.36	PASS
			1000~26500	-6.36	-46.2	≤-26.36	PASS
		2440	Reference	-7.59	-7.59	---	PASS
			30~1000	-7.59	-60.26	≤-27.59	PASS
			1000~26500	-7.59	-45.93	≤-27.59	PASS
		2480	Reference	-8.24	-8.24	---	PASS
			30~1000	-8.24	-60.65	≤-28.24	PASS
			1000~26500	-8.24	-45.32	≤-28.24	PASS





Test Graphs

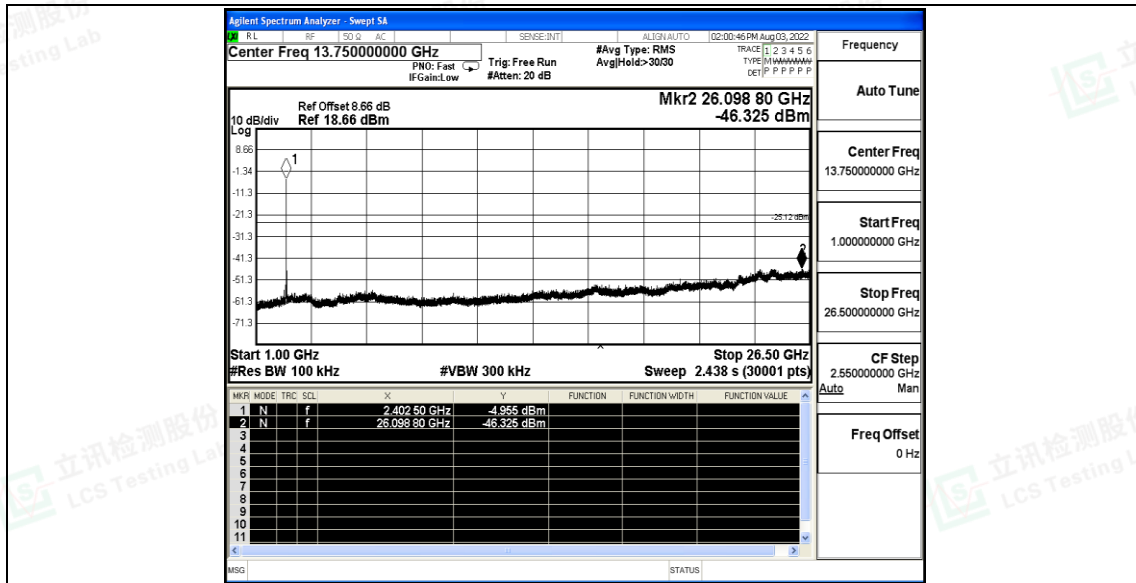


Shenzhen LCS Compliance Testing Laboratory Ltd.

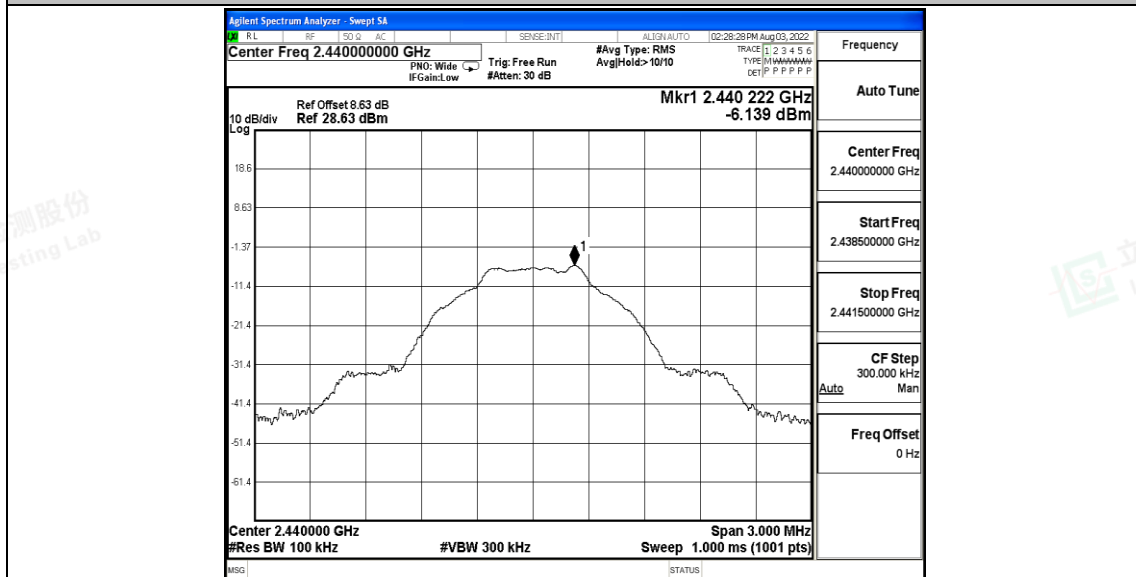
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BLE_1M_Ant1_2440_0~Reference



BLE_1M_Ant1_2440_30~1000

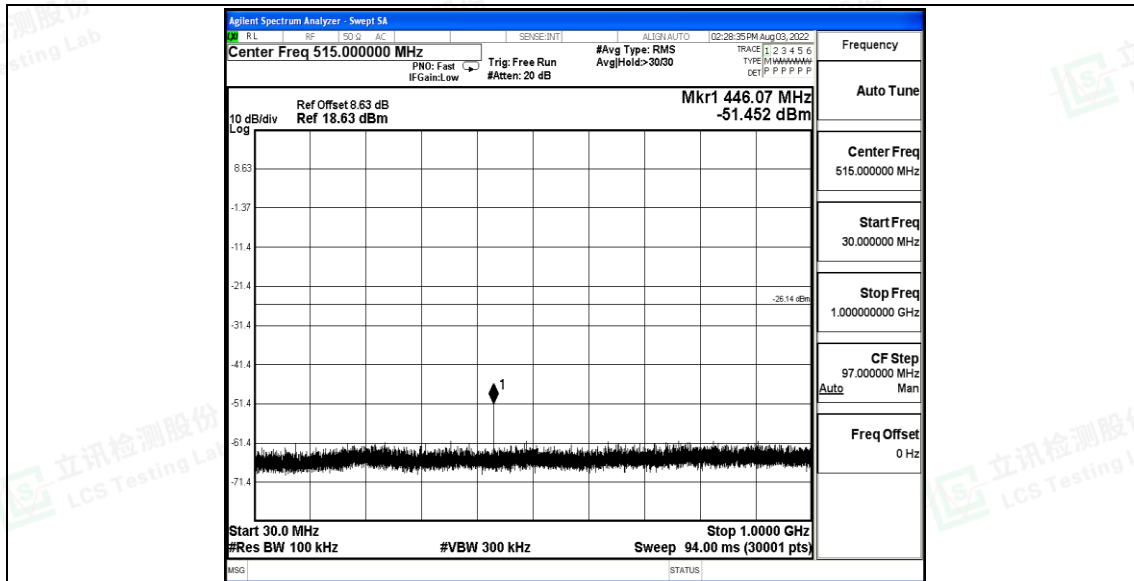


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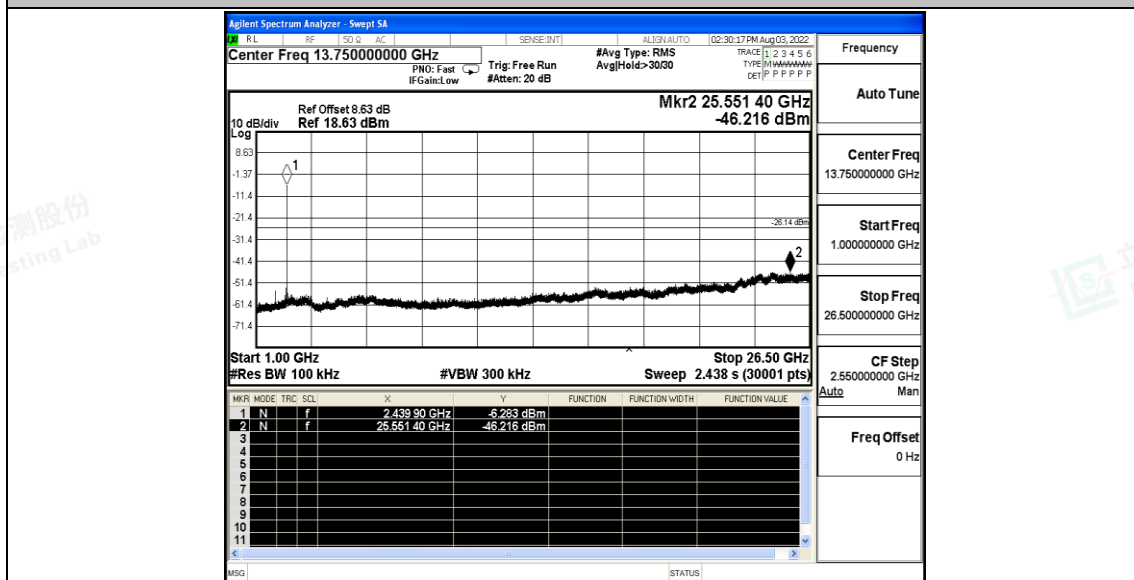
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BLE_1M_Ant1_2440_1000~26500



BLE_1M_Ant1_2480_0~Reference

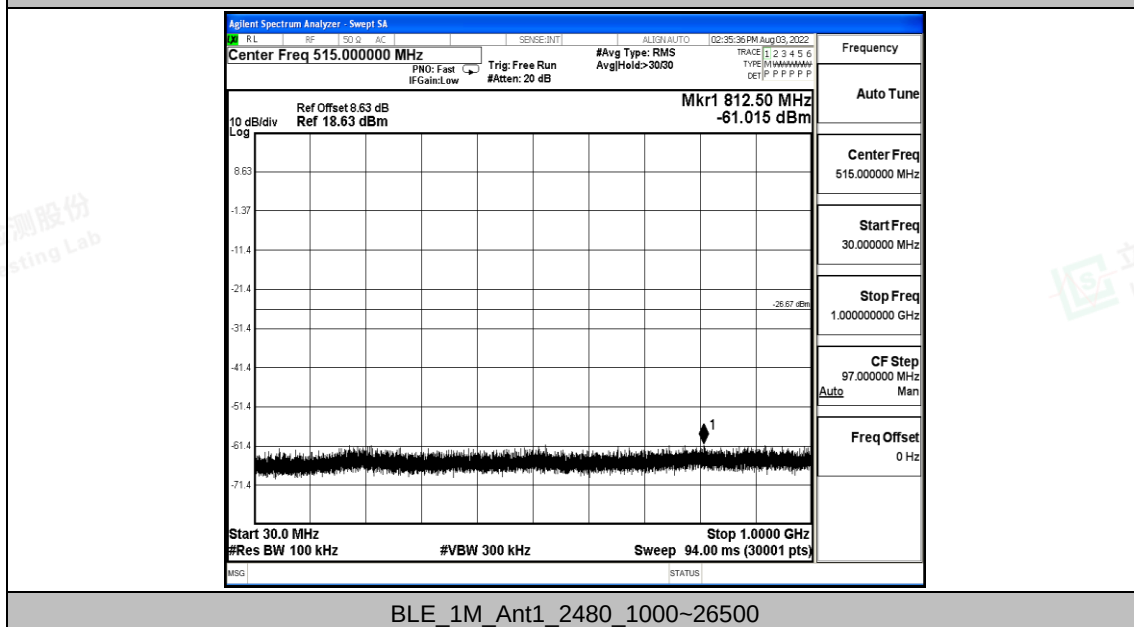
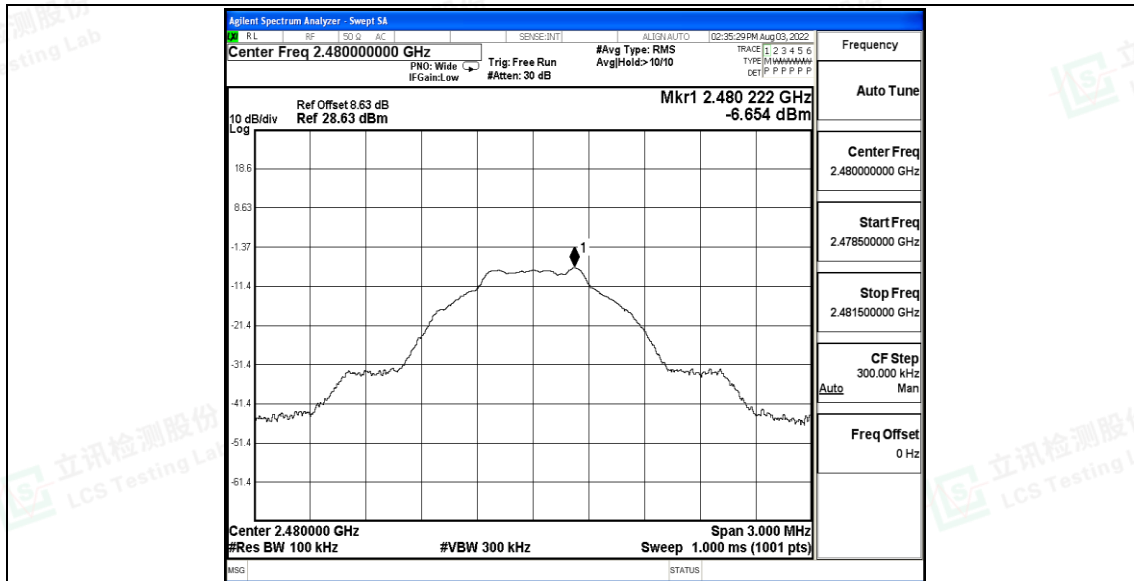


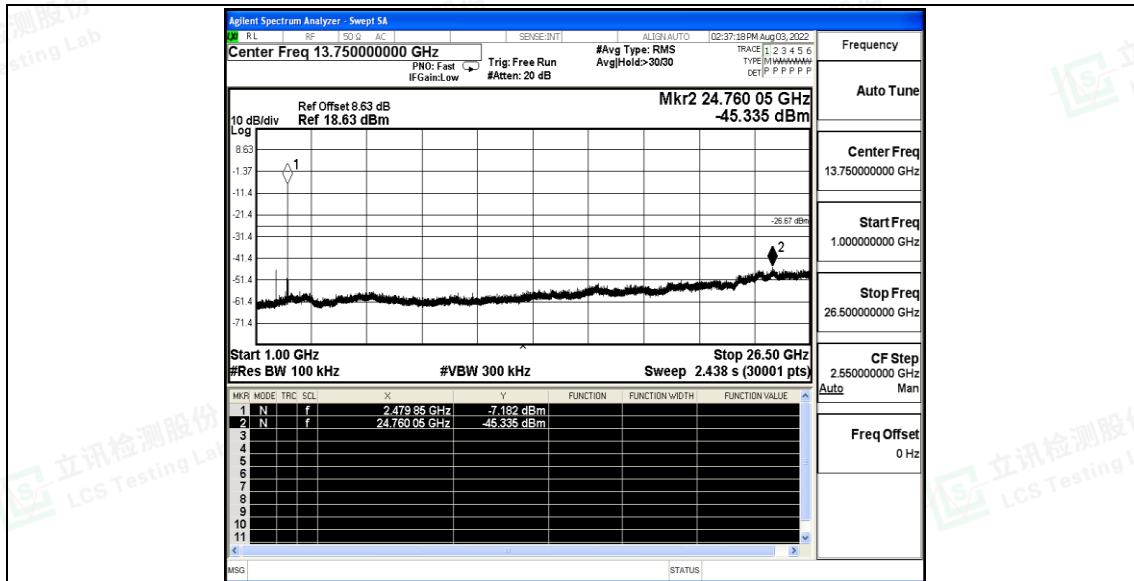
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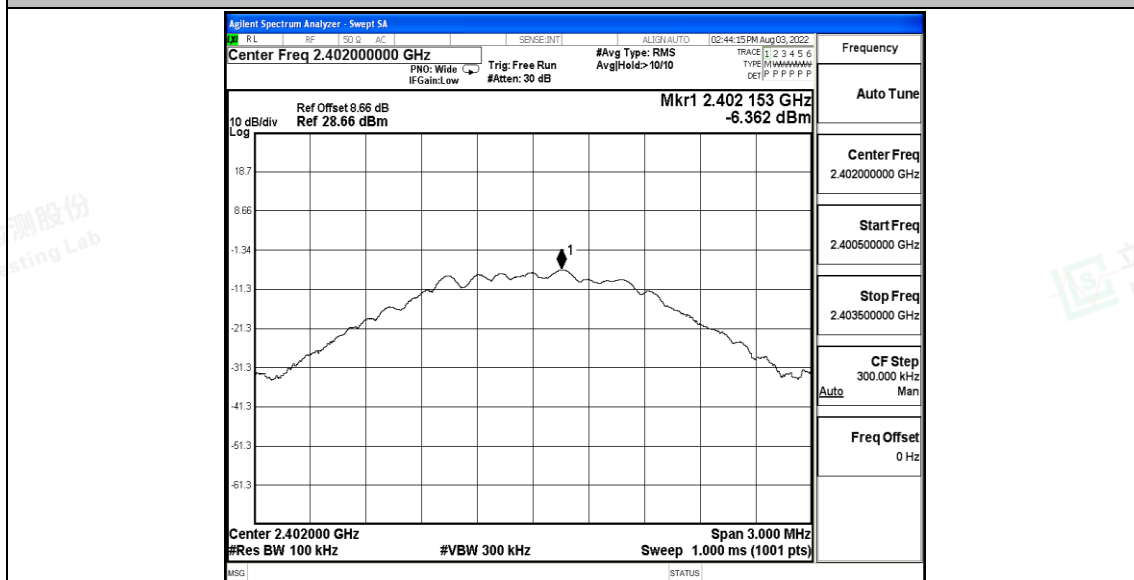
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BLE_2M_Ant1_2402_0~Reference



BLE_2M_Ant1_2402_30~1000

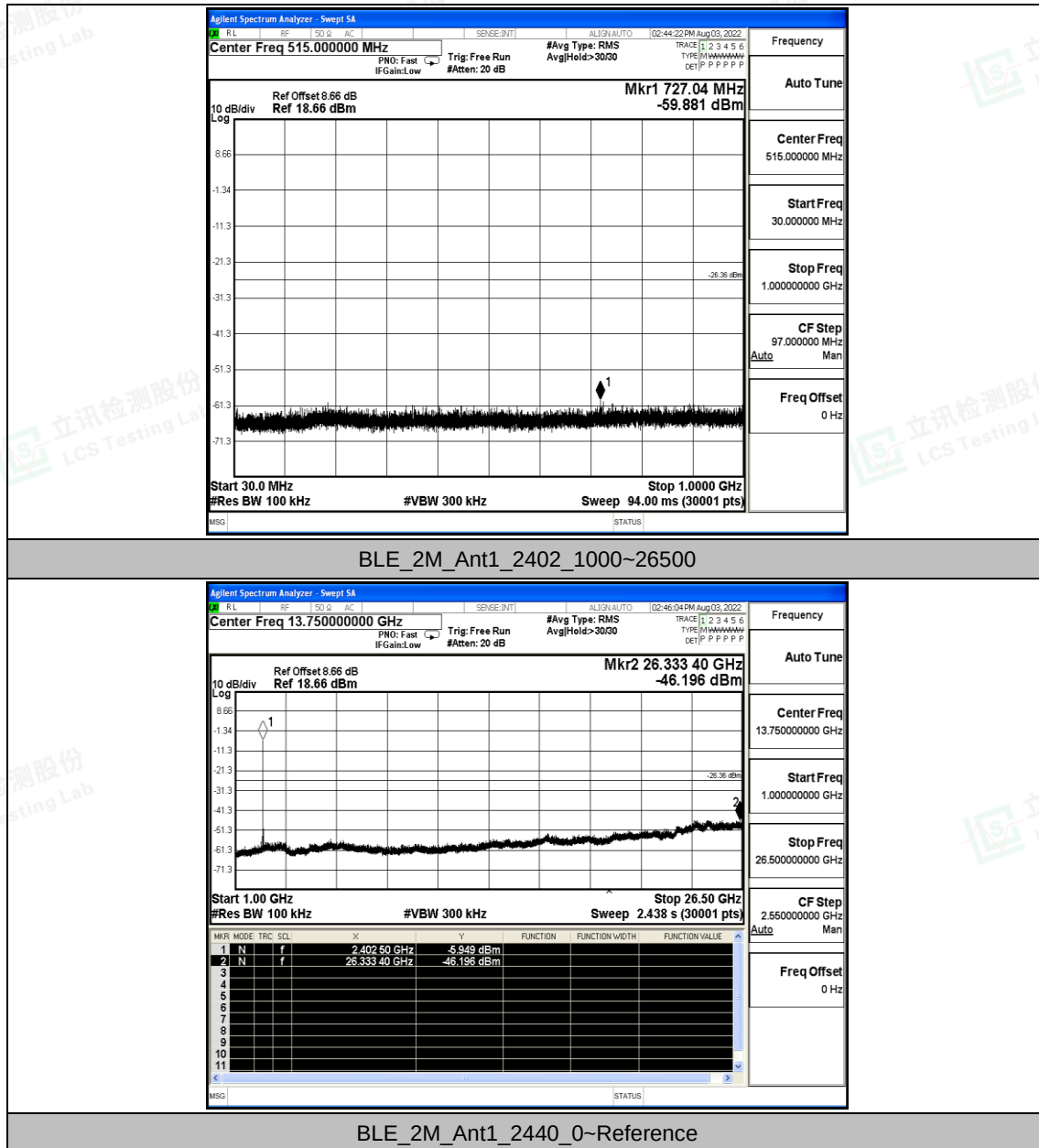


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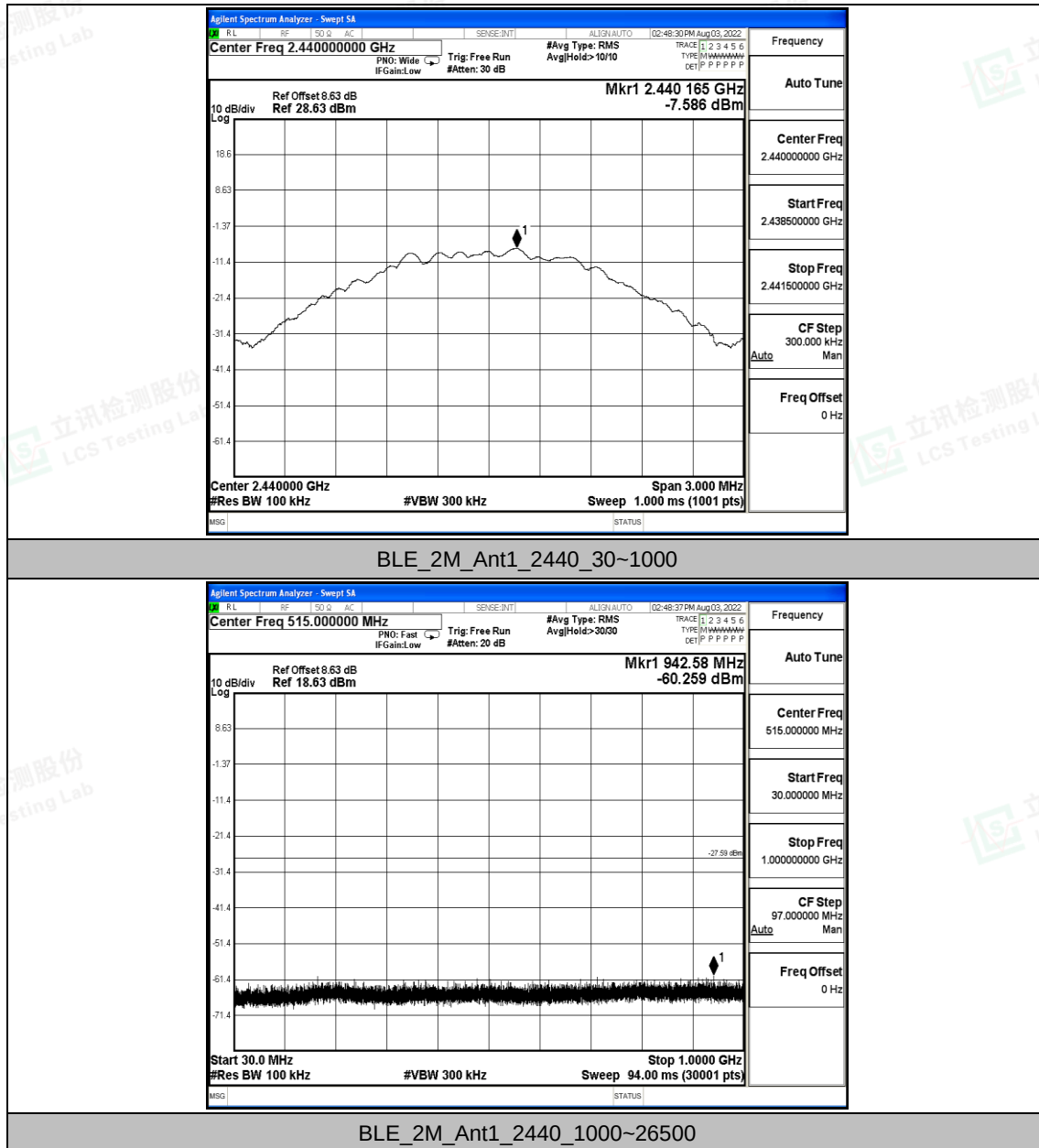


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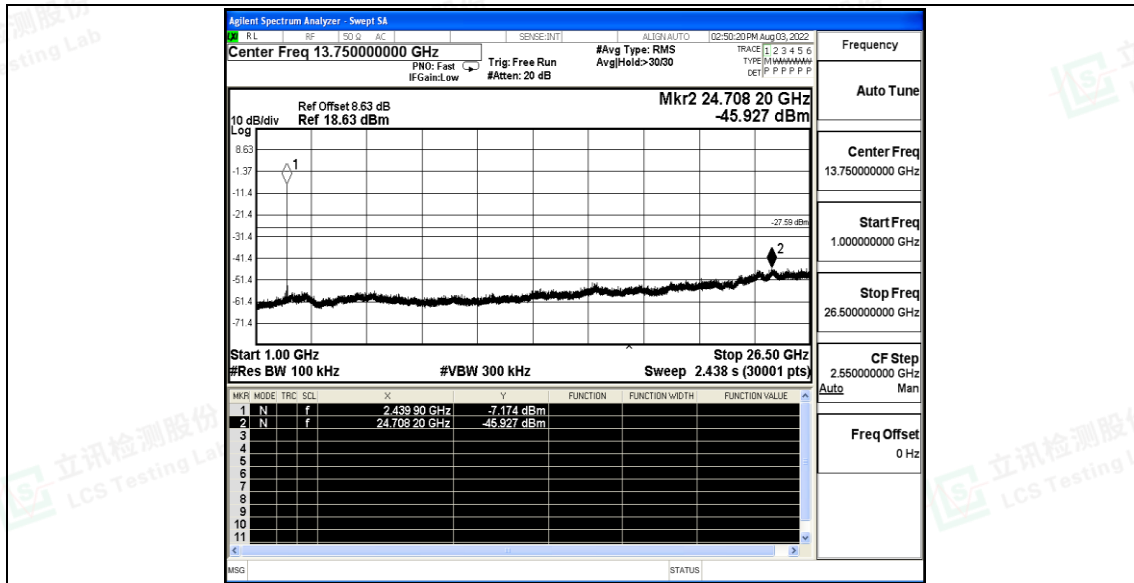


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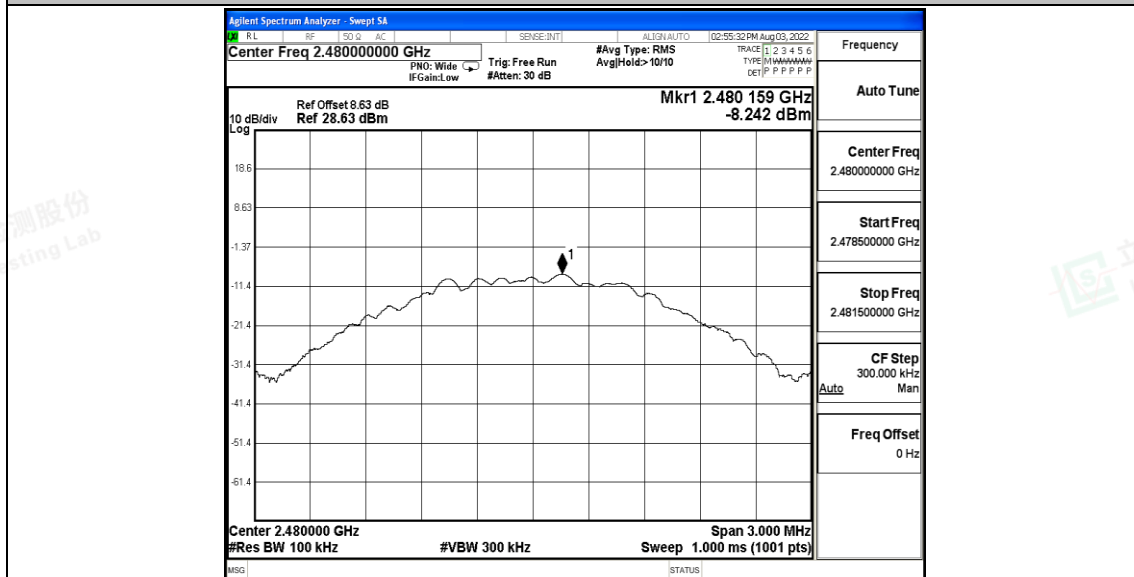
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BLE_2M_Ant1_2480_0~Reference



BLE_2M_Ant1_2480_30~1000

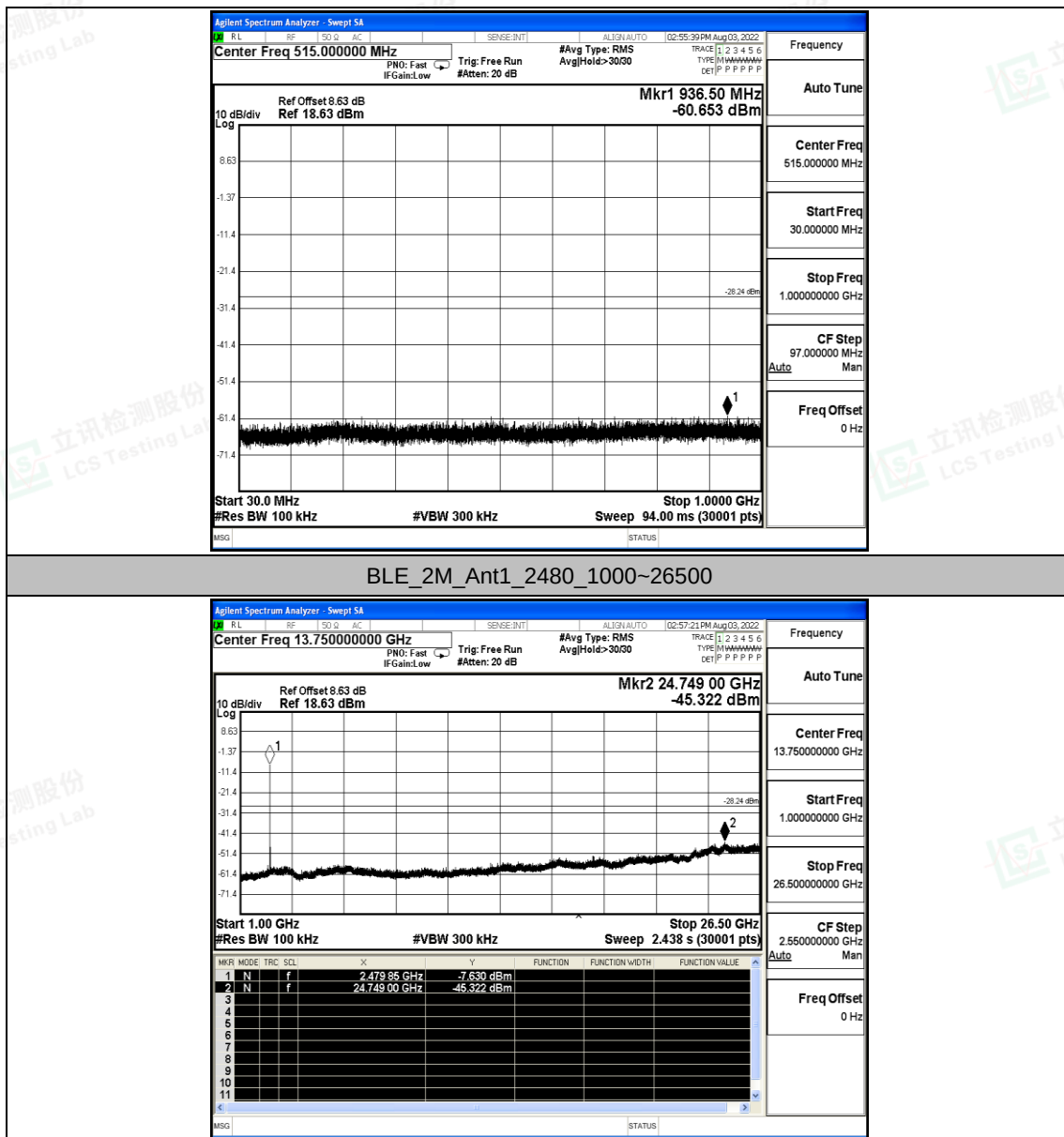


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A.7 Duty Cycle

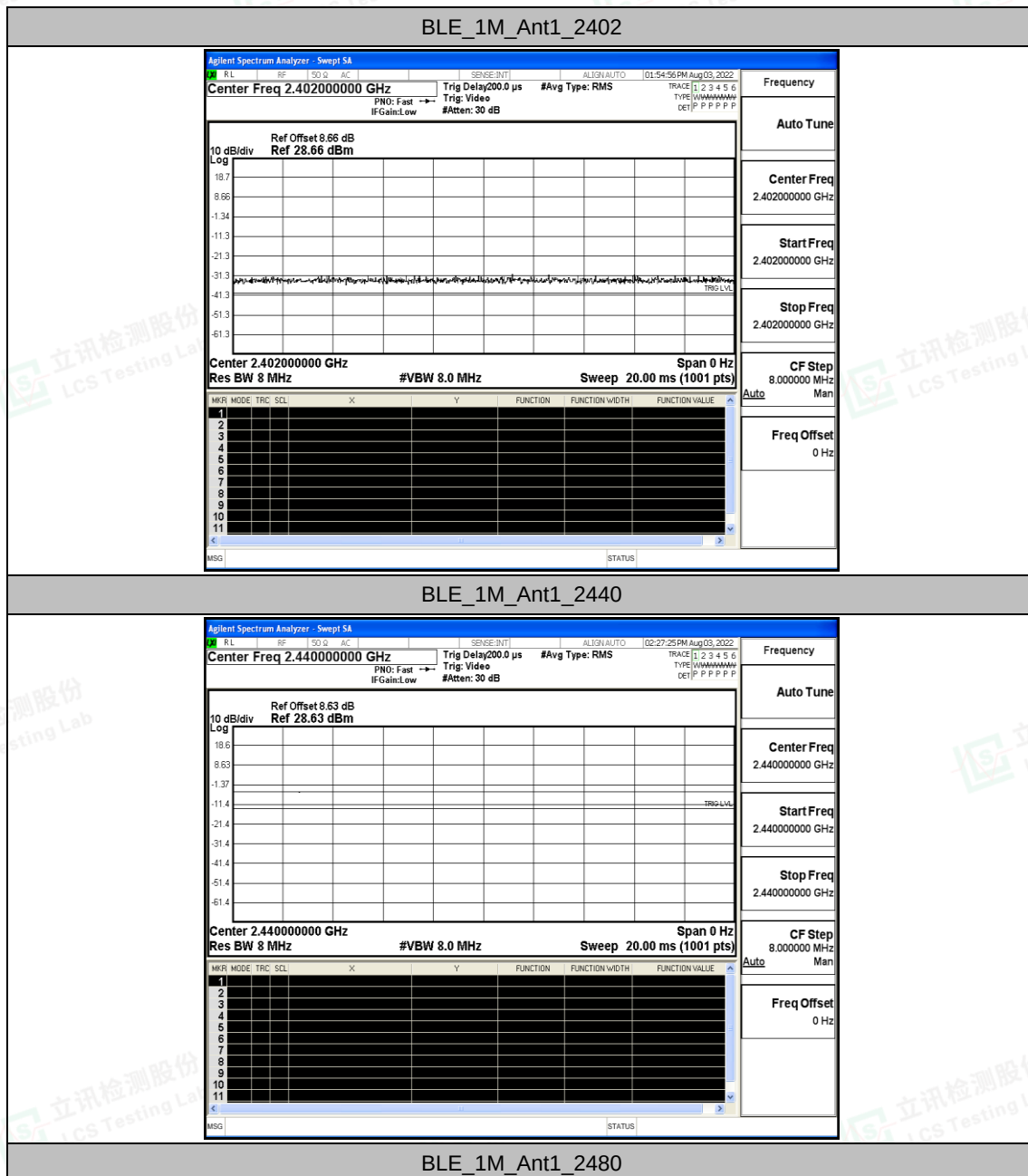
Test Result

TestMode	Antenna	Channel	ON Time [ms]	Period [ms]	X	DC [%]	xFactor	1/T [kHz]	Limit	Verdict
BLE_1M	Ant1	2402	20.00	20.00	1.0000	100.00	0.00	0.01	---	---
		2440	20.00	20.00	1.0000	100.00	0.00	0.01	---	---
		2480	20.00	20.00	1.0000	100.00	0.00	0.01	---	---
BLE_2M	Ant1	2402	20.00	20.00	1.0000	100.00	0.00	0.01	---	---
		2440	20.00	20.00	1.0000	100.00	0.00	0.01	---	---
		2480	20.00	20.00	1.0000	100.00	0.00	0.01	---	---





Test Graphs

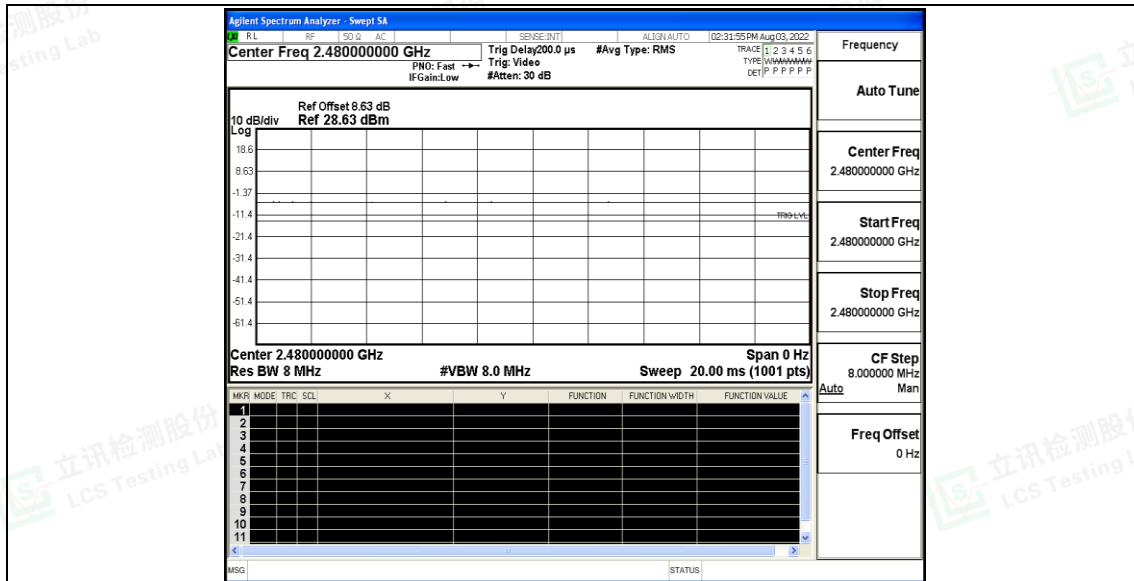


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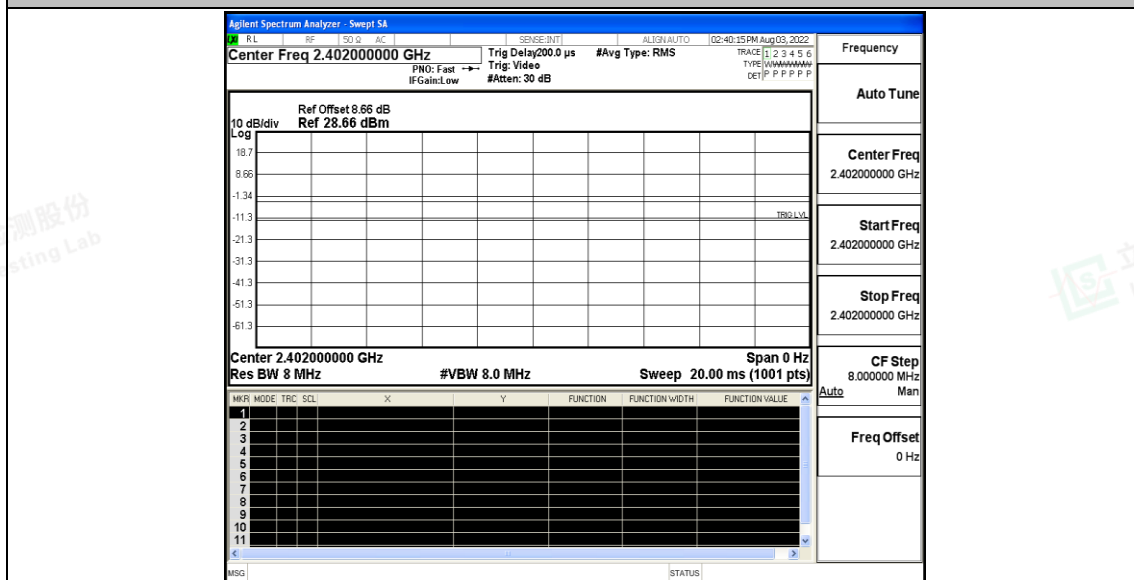
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BLE_2M_Ant1_2402



BLE_2M_Ant1_2440

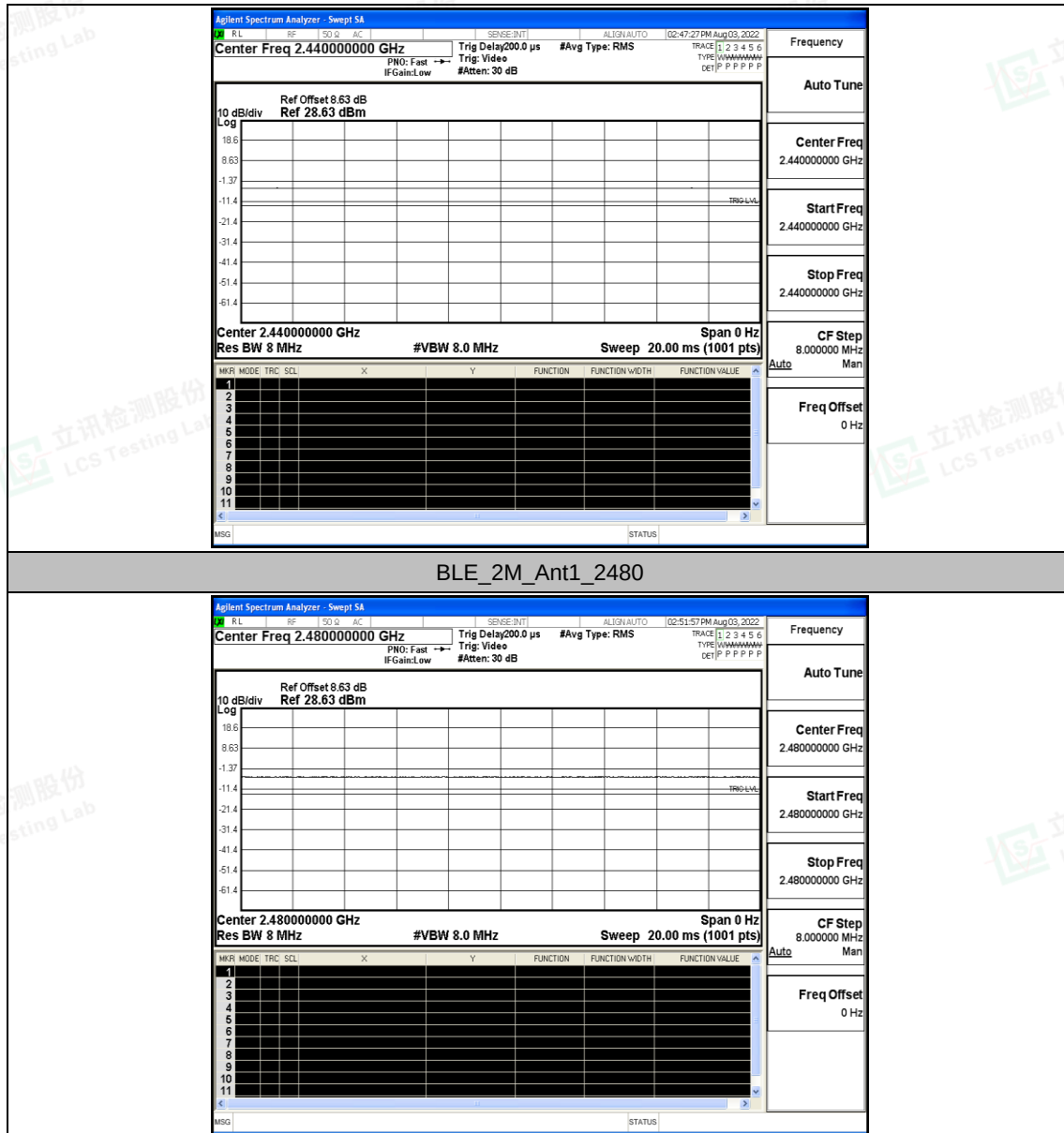


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A.8 Emissions in Restricted Bands

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	-58.32	≤-41.20	36.88	≤54	PASS
				AV	2378.015	-52.72	≤-41.20	42.48	≤54	PASS
				AV	2390.000	-55.64	≤-41.20	39.56	≤54	PASS
				Peak	2310.000	-49.02	≤-21.20	46.18	≤74	PASS
				Peak	2389.880	-43.54	≤-21.20	51.66	≤74	PASS
				Peak	2390.000	-43.84	≤-21.20	51.36	≤74	PASS
		High	2480	AV	2483.500	-46.93	≤-41.20	48.27	≤54	PASS
				AV	2483.520	-46.93	≤-41.20	48.27	≤54	PASS
				AV	2500.000	-57.4	≤-41.20	37.80	≤54	PASS
				Peak	2483.500	-38.07	≤-21.20	57.13	≤74	PASS
				Peak	2483.840	-36.85	≤-21.20	58.35	≤74	PASS
				Peak	2500.000	-47.52	≤-21.20	47.68	≤74	PASS
BLE_2M	Ant1	Low	2402	AV	2310.000	-58.24	≤-41.20	36.96	≤54	PASS
				AV	2378.015	-52.67	≤-41.20	42.53	≤54	PASS
				AV	2390.000	-54.55	≤-41.20	40.65	≤54	PASS
				Peak	2310.000	-48.47	≤-21.20	46.73	≤74	PASS
				Peak	2389.670	-43.11	≤-21.20	52.09	≤74	PASS
				Peak	2390.000	-44.53	≤-21.20	50.67	≤74	PASS
		High	2480	AV	2483.500	-41.45	≤-41.20	53.75	≤54	PASS
				AV	2483.520	-41.45	≤-41.20	53.75	≤54	PASS
				AV	2500.000	-57.35	≤-41.20	37.85	≤54	PASS
				Peak	2483.500	-32.94	≤-21.20	62.26	≤74	PASS
				Peak	2483.520	-32.94	≤-21.20	62.26	≤74	PASS
				Peak	2500.000	-47.5	≤-21.20	47.70	≤74	PASS

Note:

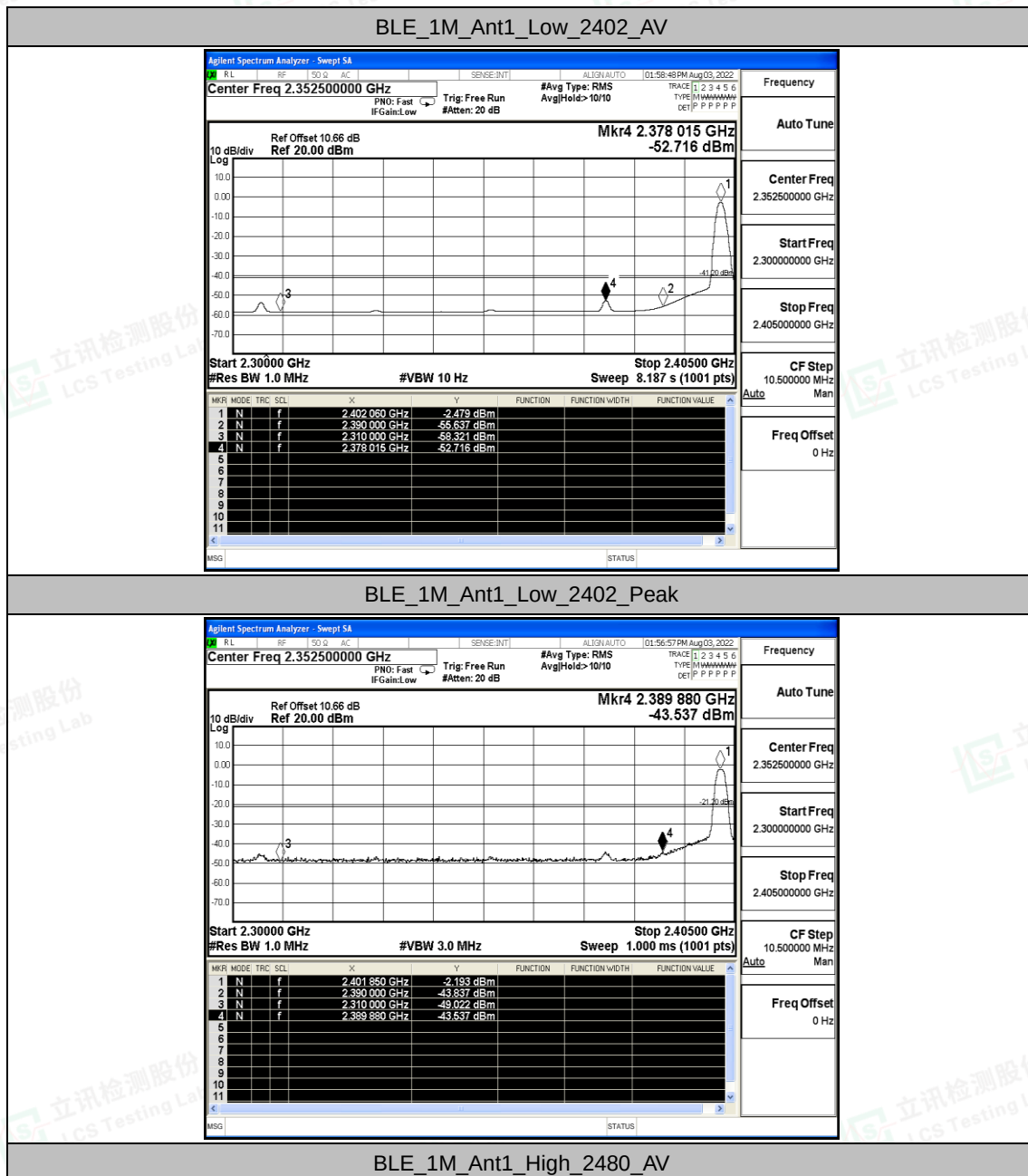
1. The Antenna Gain is compensated in the graph.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.



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
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Test Graphs

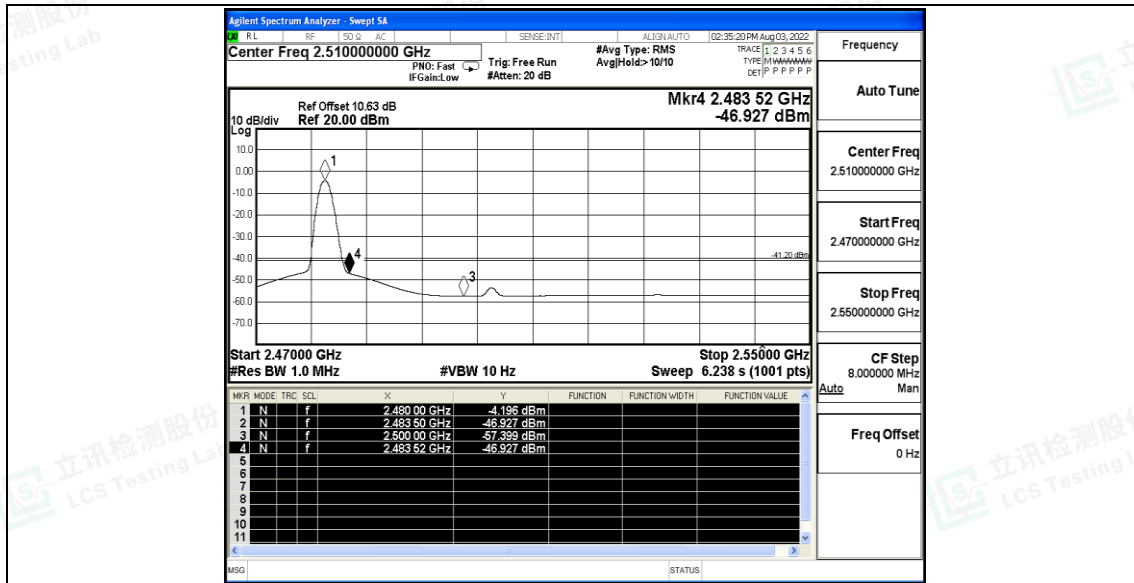


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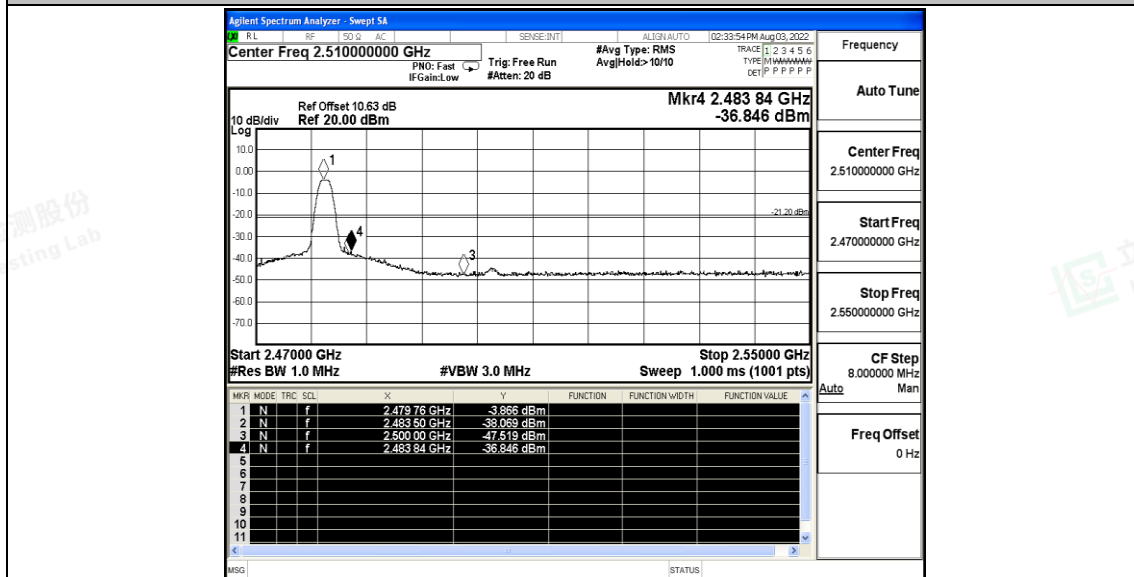
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BLE_1M_Ant1_High_2480_Peak



BLE_2M_Ant1_Low_2402_AV

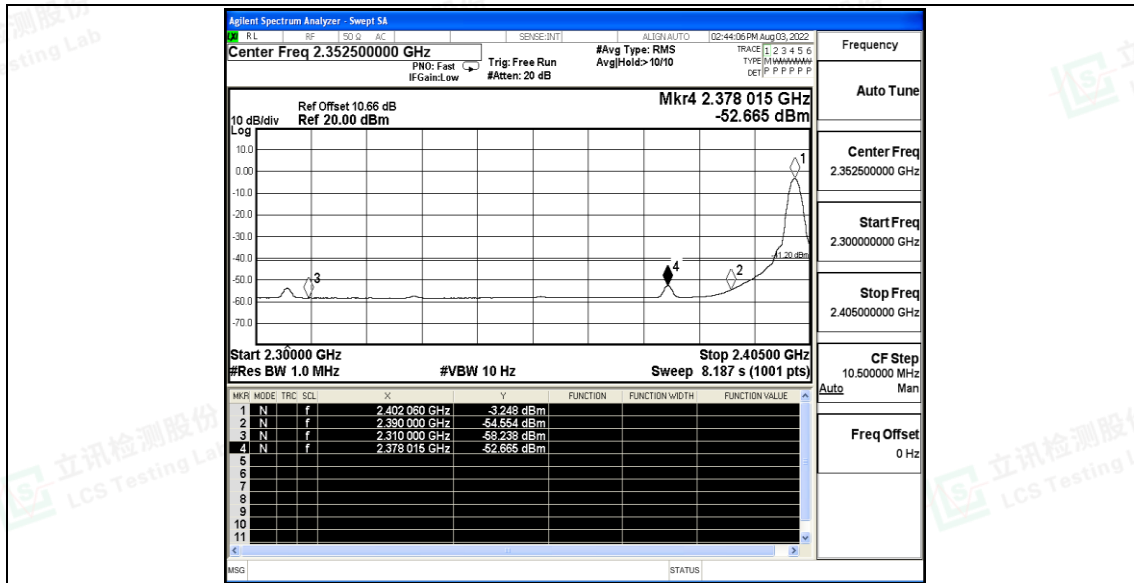


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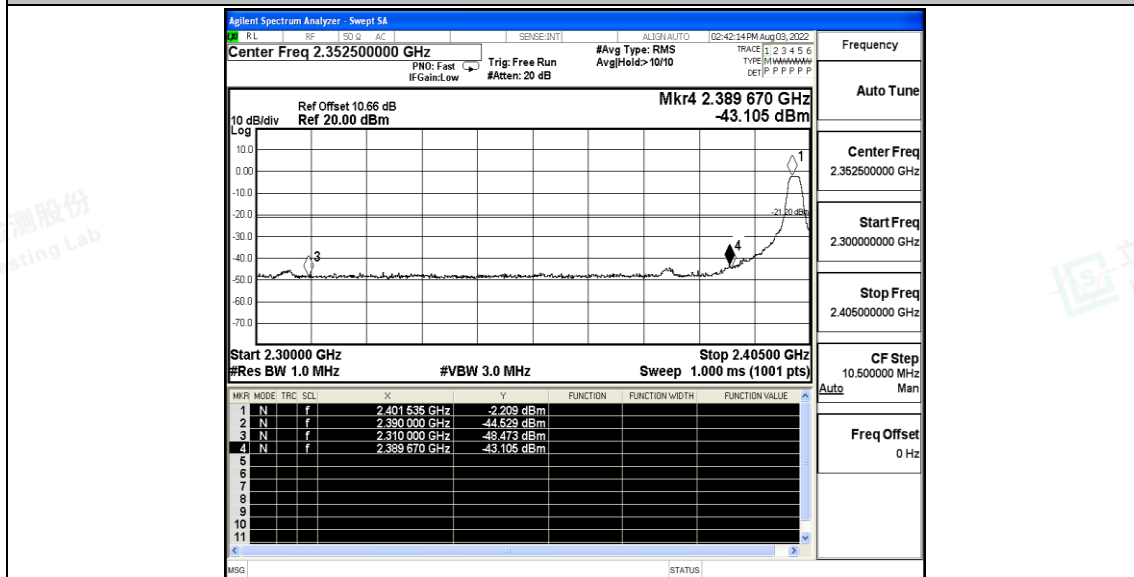
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BLE_2M_Ant1_Low_2402_Peak



BLE_2M_Ant1_High_2480_AV

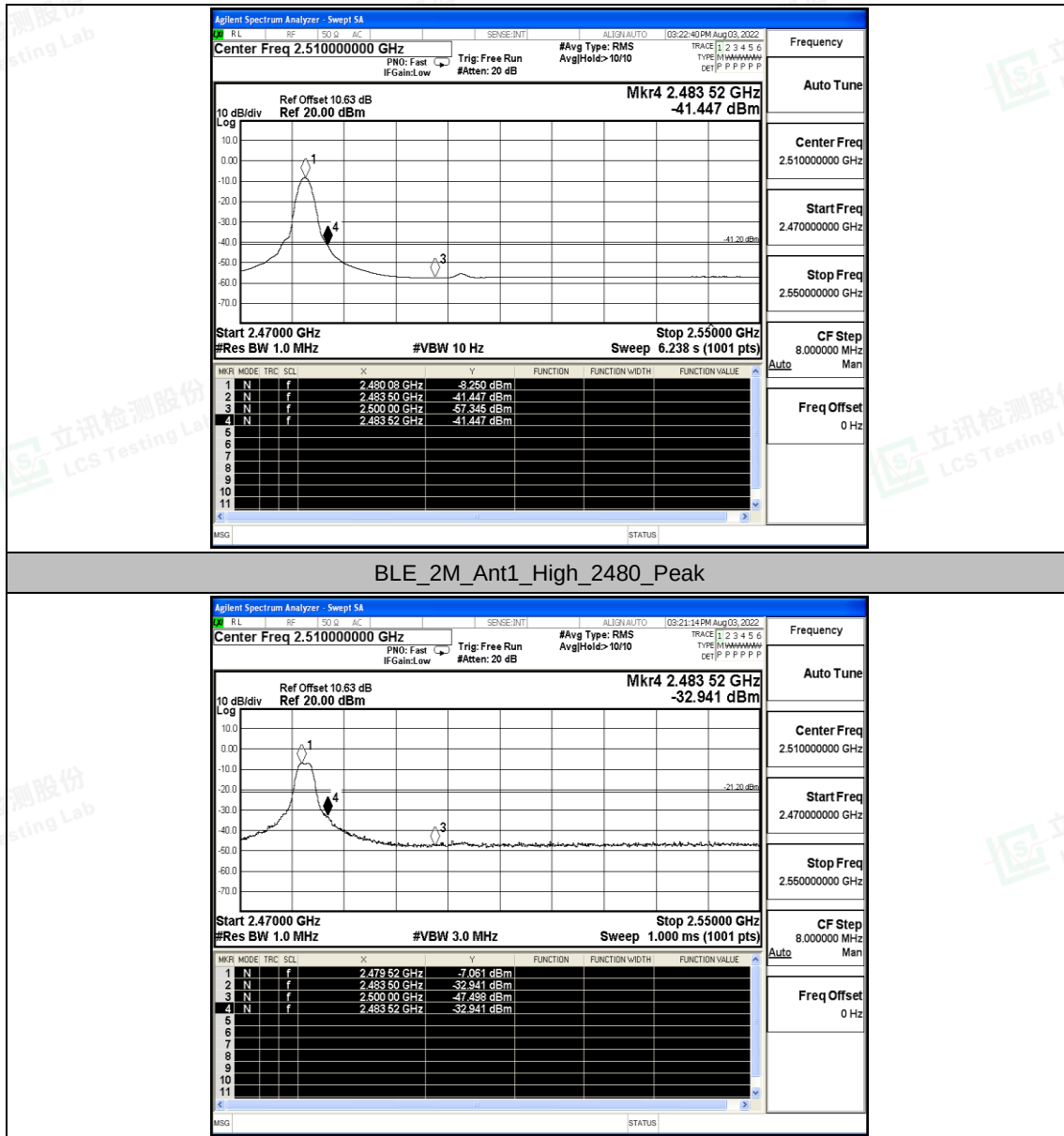


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