



Appendix B

RF Test Data for BLE (Conducted Measurement)

Product Name: TWS Earphone

Test Model: ePRO-AE03

Environmental Conditions

Temperature:	23.5 °C
Relative Humidity:	52.2%
ATM Pressure:	100.0 kPa
Test Engineer:	Bill Zhu
Supervised by:	Li Huan





B.1DTS Bandwidth

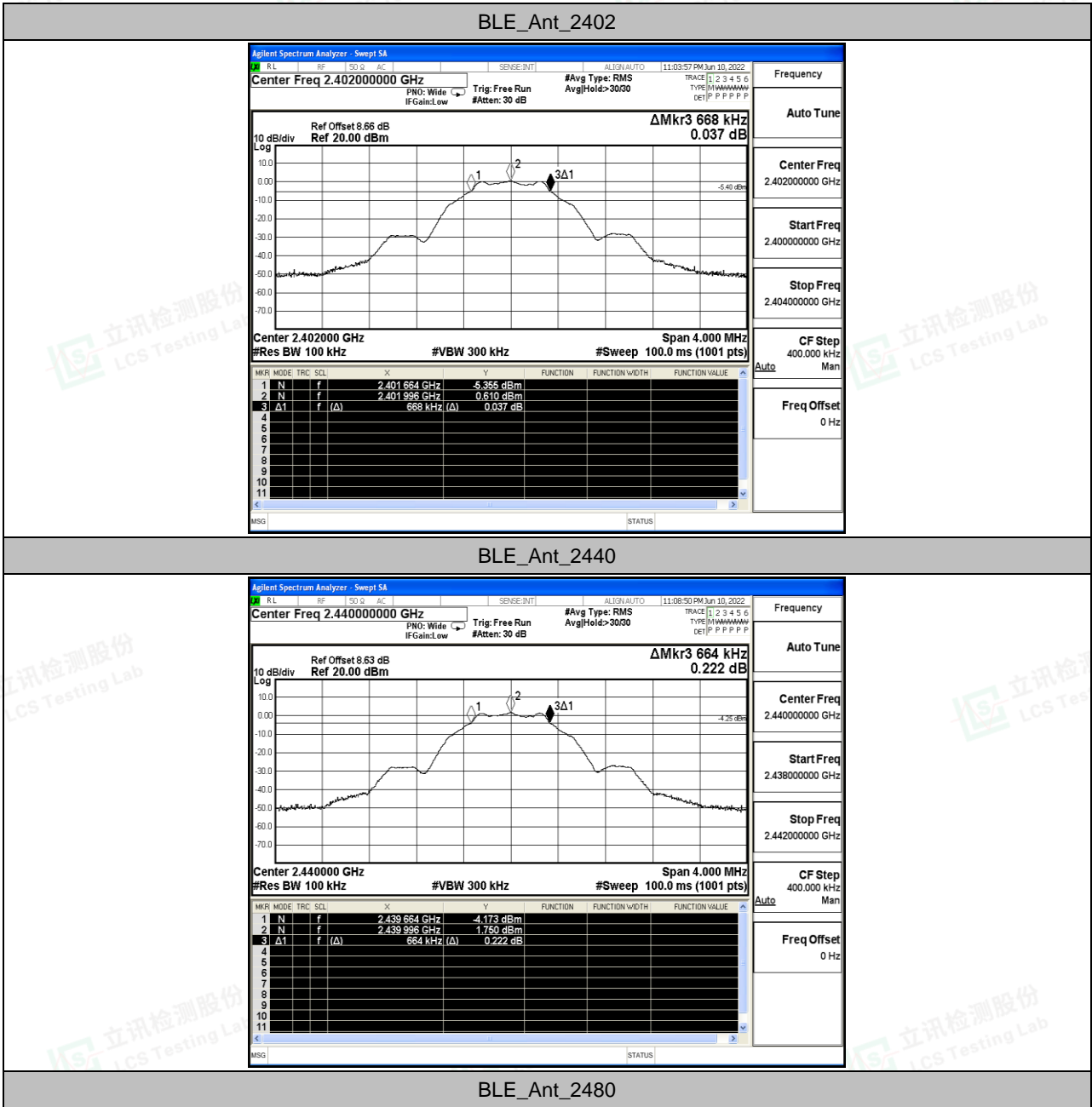
Test Result

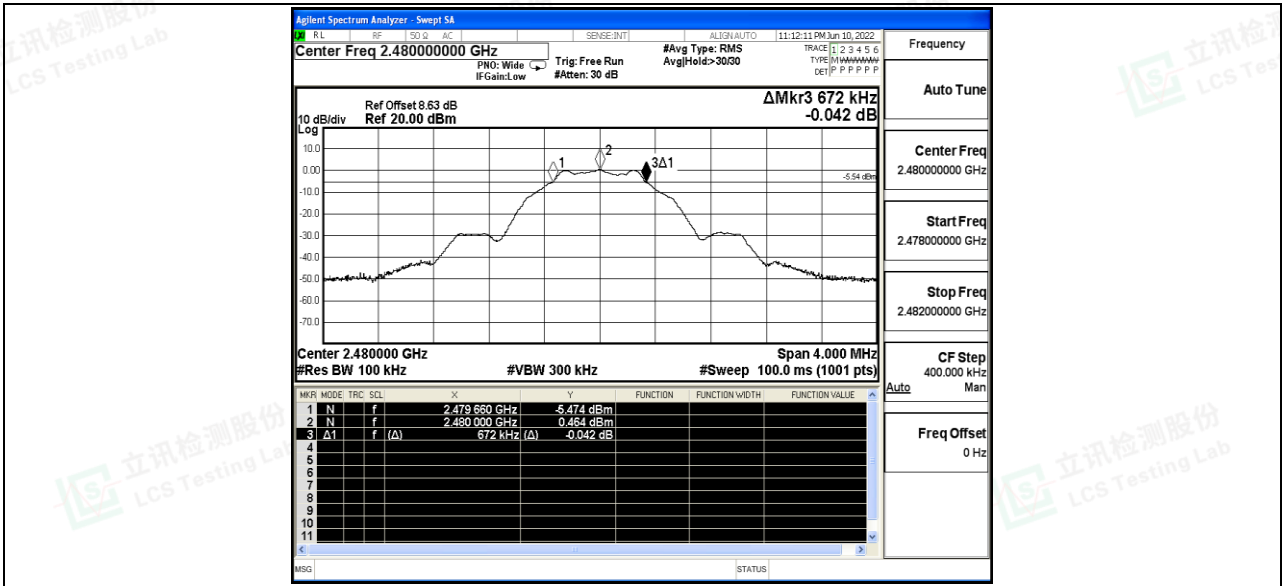
TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE	Ant	2402	0.668	2401.664	2402.332	0.5	PASS
		2440	0.664	2439.664	2440.328	0.5	PASS
		2480	0.672	2479.660	2480.332	0.5	PASS





Test Graphs







B.2 Maximum conducted output power

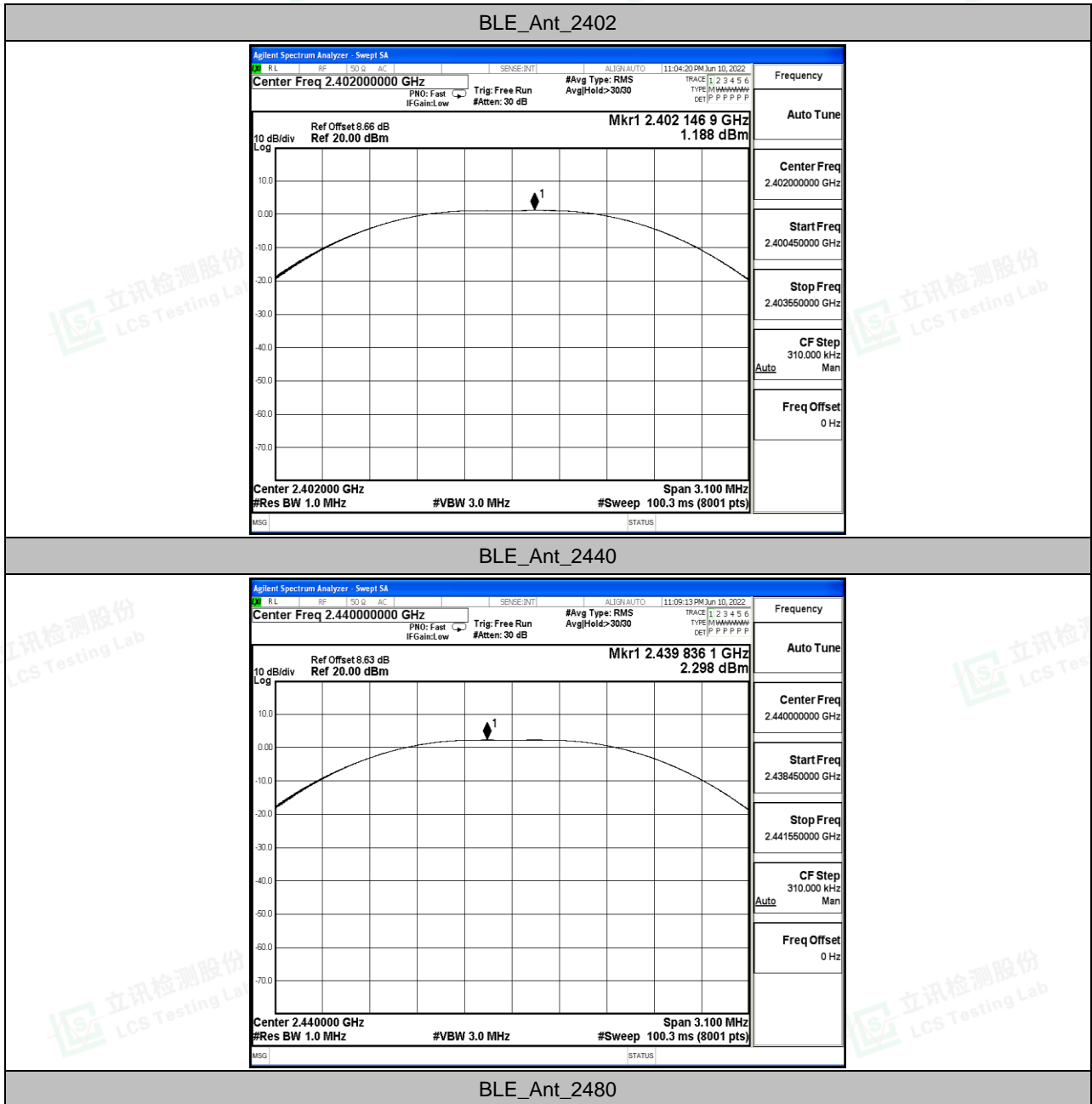
Test Result

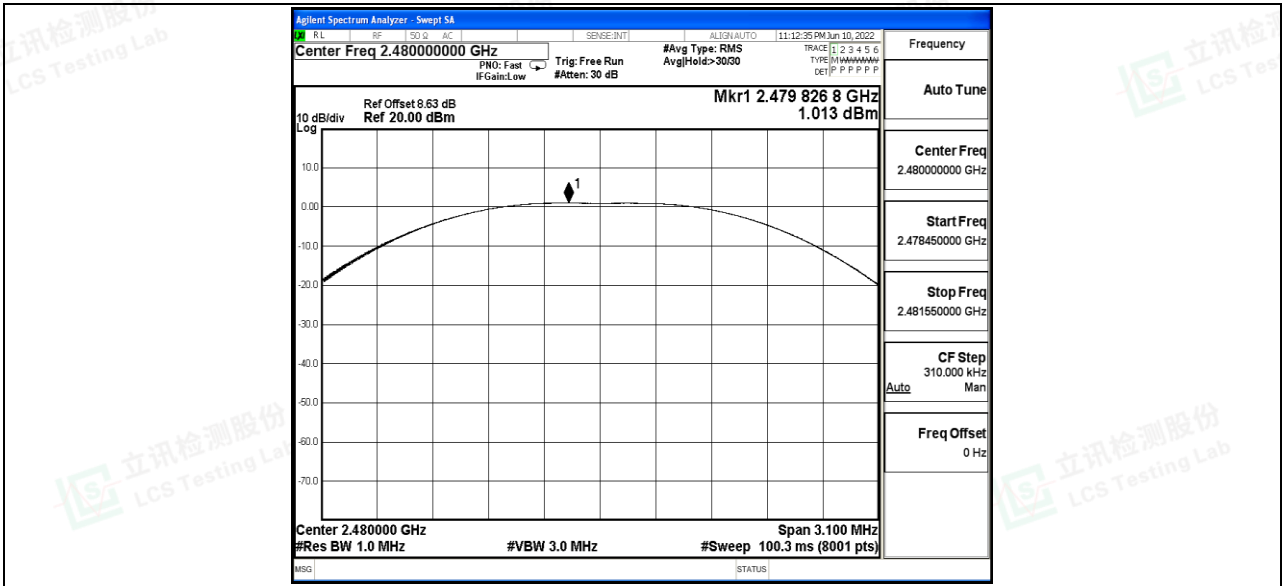
TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE	Ant	2402	1.19	≤30	PASS
		2440	2.3	≤30	PASS
		2480	1.01	≤30	PASS





Test Graphs







B.3 Maximum power spectral density

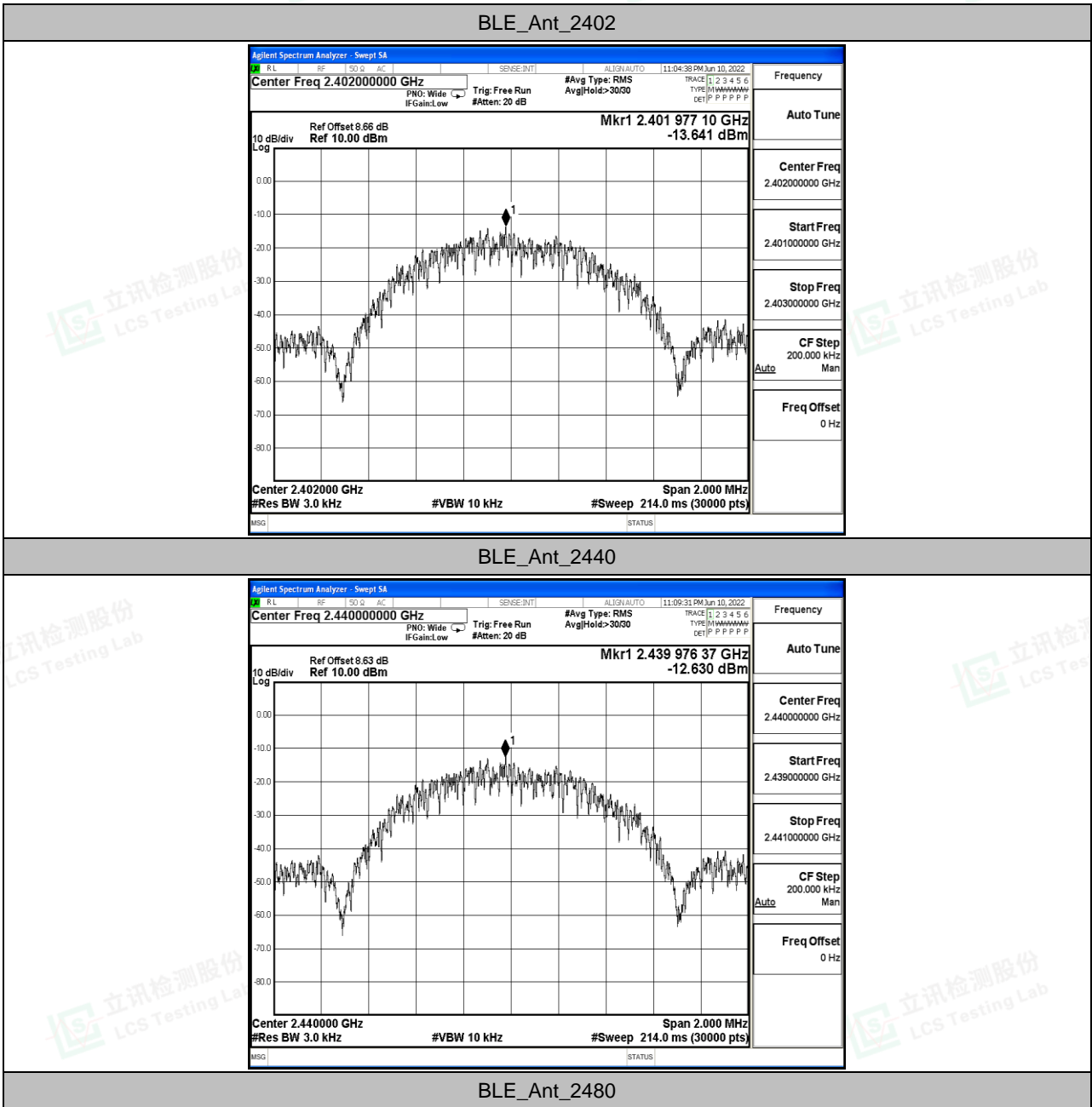
Test Result

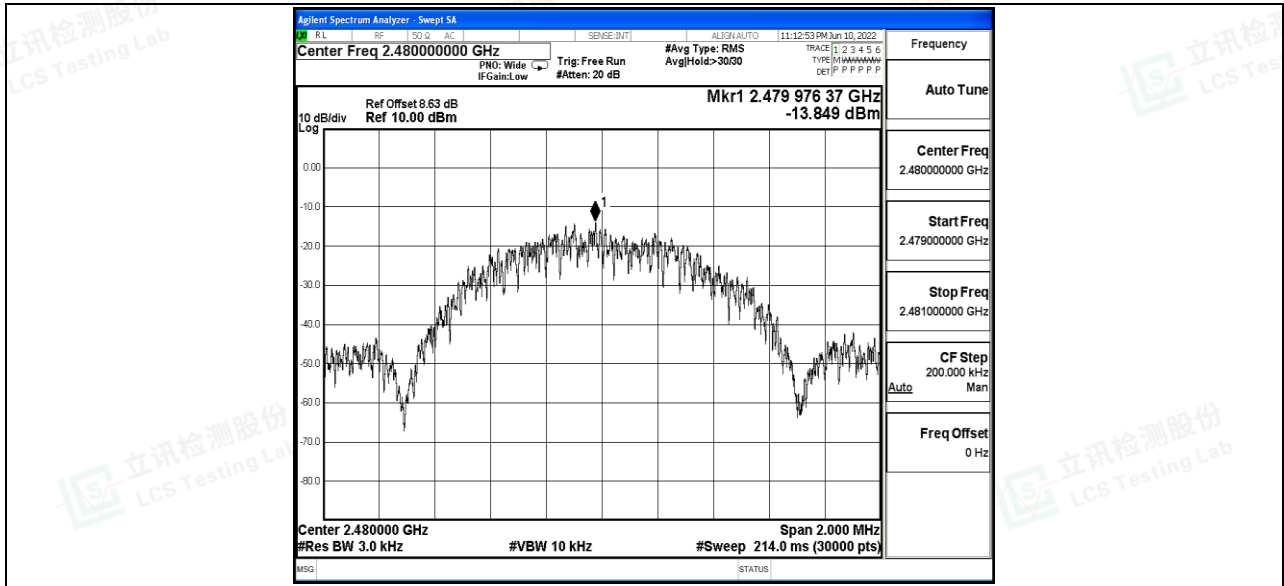
TestMode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE	Ant	2402	-13.64	≤8.00	PASS
		2440	-12.63	≤8.00	PASS
		2480	-13.85	≤8.00	PASS





Test Graphs





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B.4 Band edge measurements

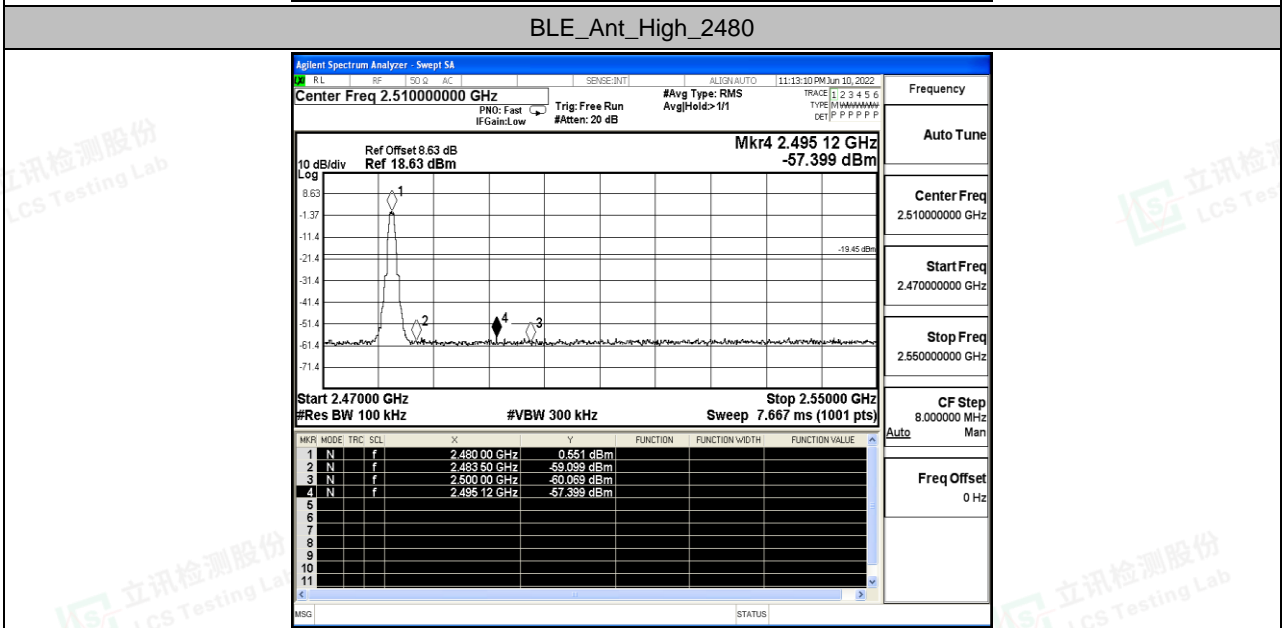
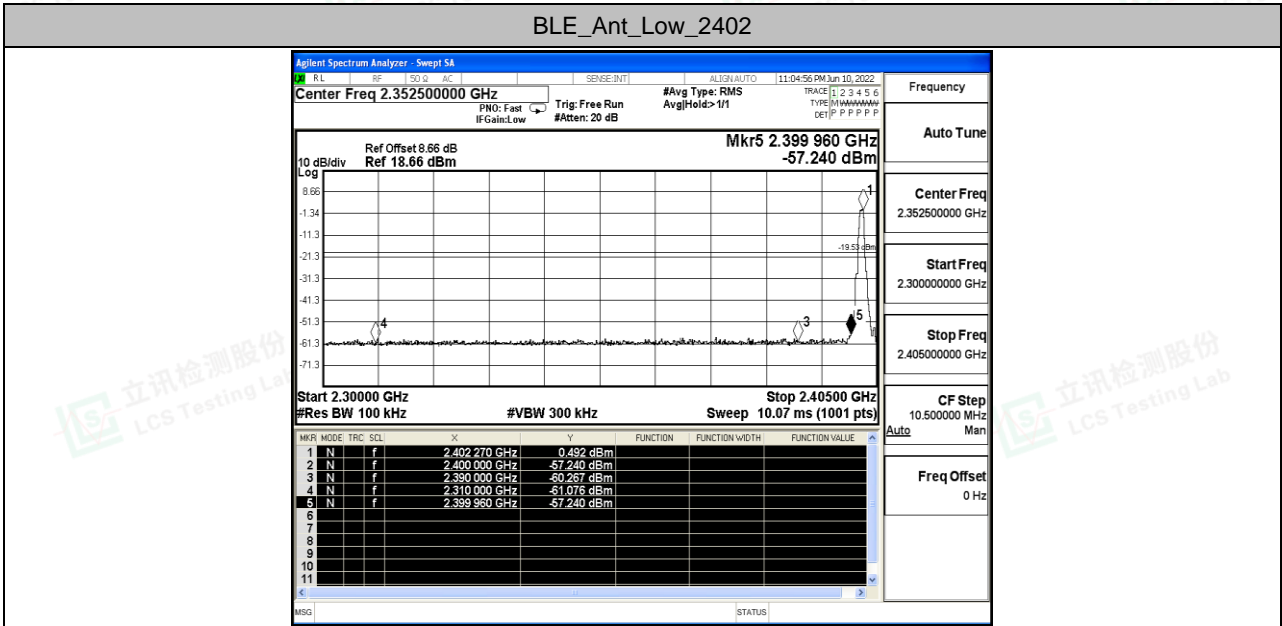
Test Result

TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE	Ant	Low	2402	0.47	-57.24	≤-19.53	PASS
		High	2480	0.55	-57.4	≤-19.45	PASS





Test Graphs





B.5 Conducted Spurious Emission

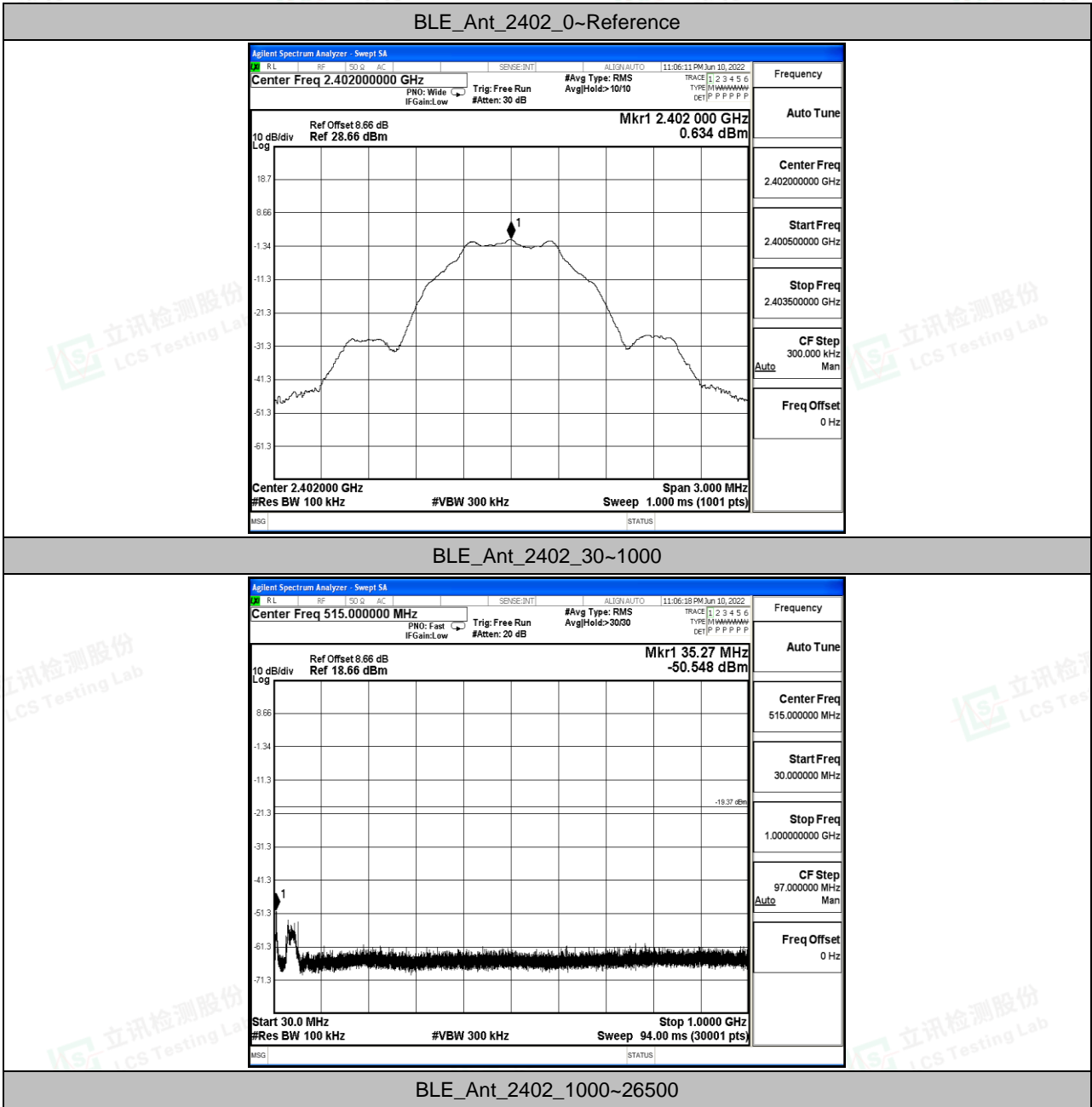
Test Result

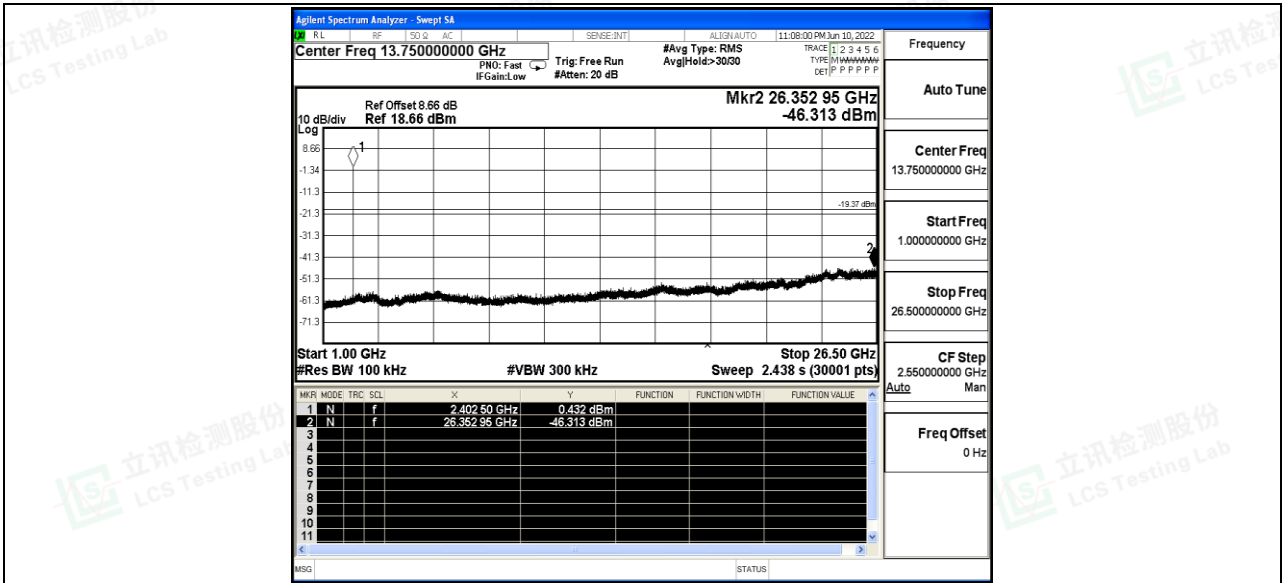
TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE	Ant	2402	Reference	0.63	0.63	---	PASS
			30~1000	0.63	-50.55	≤-19.37	PASS
			1000~26500	0.63	-46.31	≤-19.37	PASS
		2440	Reference	1.77	1.77	---	PASS
			30~1000	1.77	-50.76	≤-18.23	PASS
			1000~26500	1.77	-45.89	≤-18.23	PASS
		2480	Reference	0.46	0.46	---	PASS
			30~1000	0.46	-50.77	≤-19.54	PASS
			1000~26500	0.46	-45.92	≤-19.54	PASS



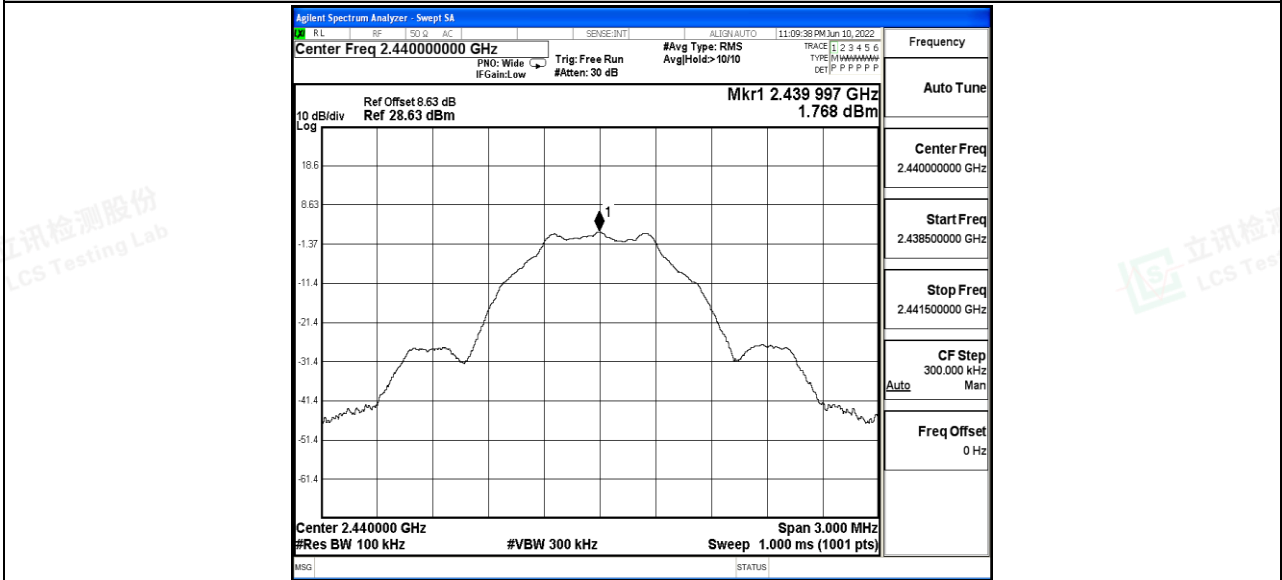


Test Graphs



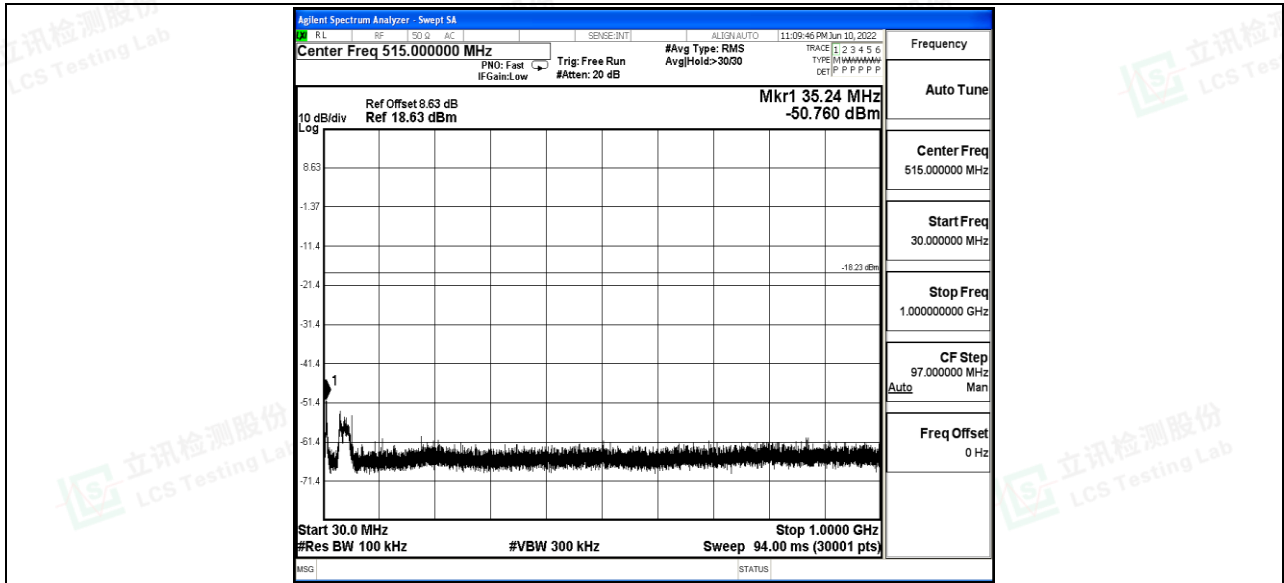


BLE_Ant_2440_0~Reference

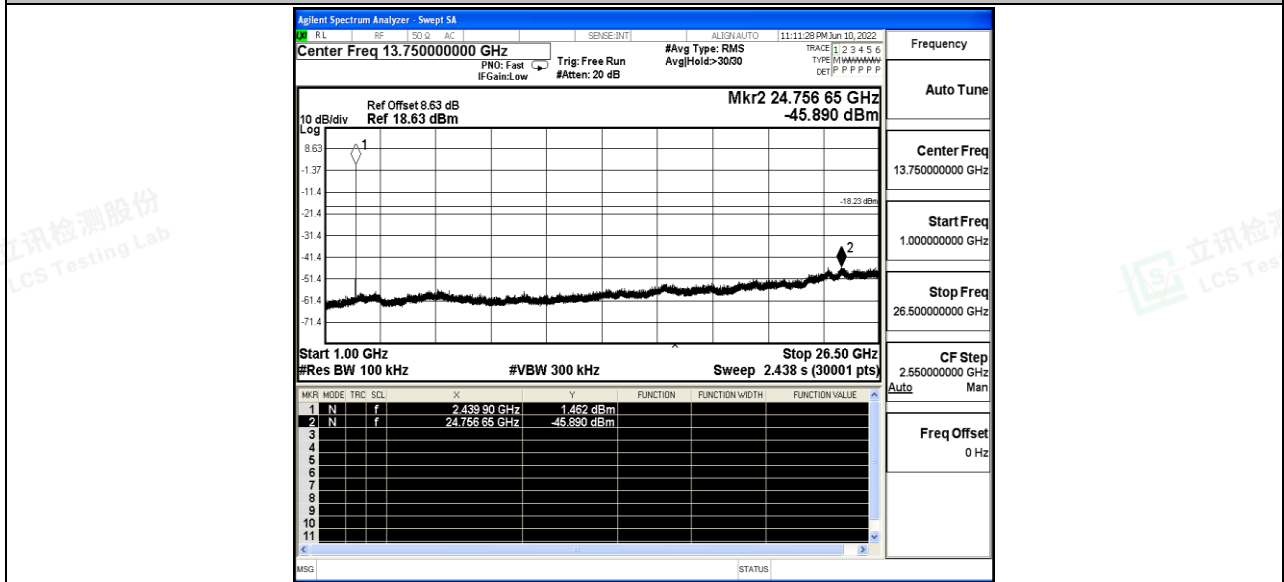


BLE_Ant_2440_30~1000





BLE_Ant_2440_1000~26500



BLE_Ant_2480_0~Reference

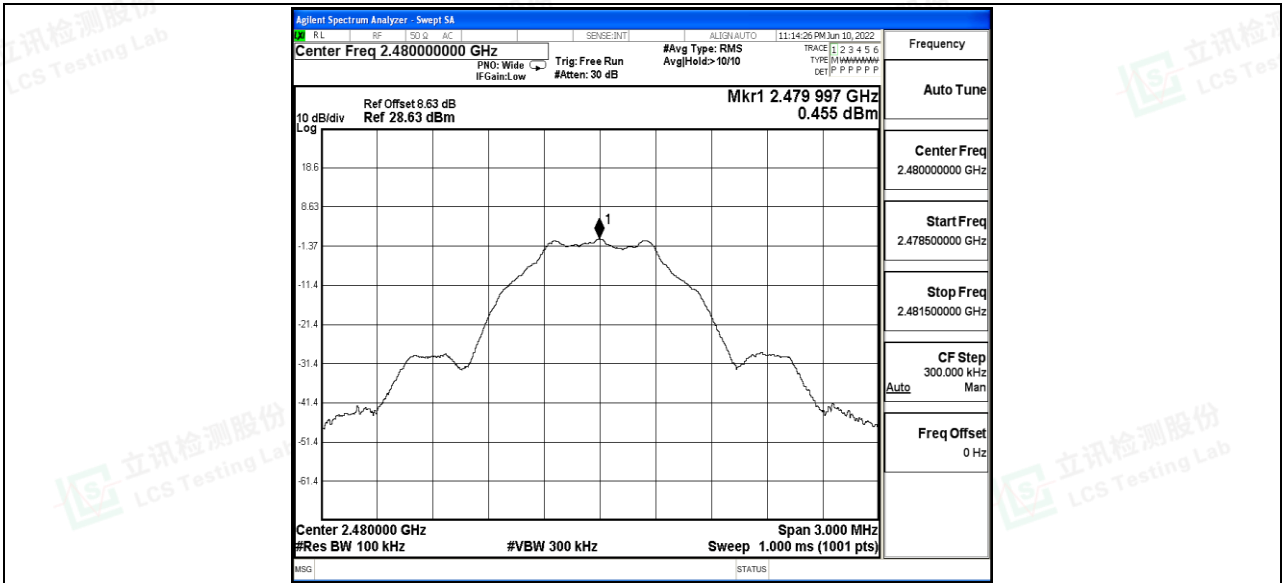


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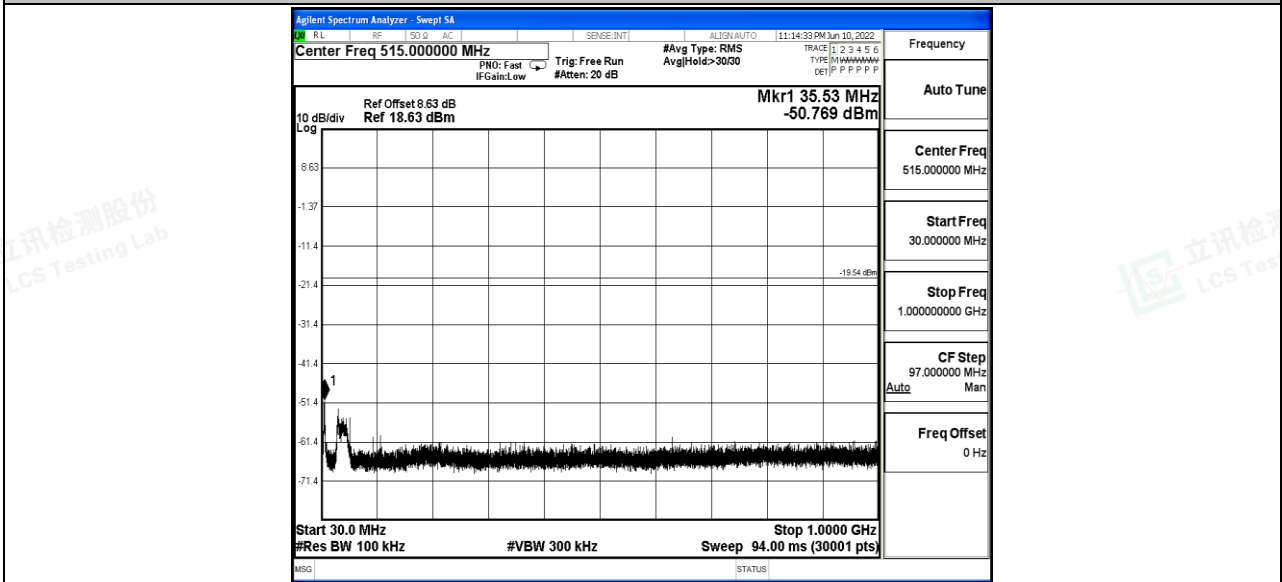
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BLE_Ant_2480_30~1000



BLE_Ant_2480_1000~26500

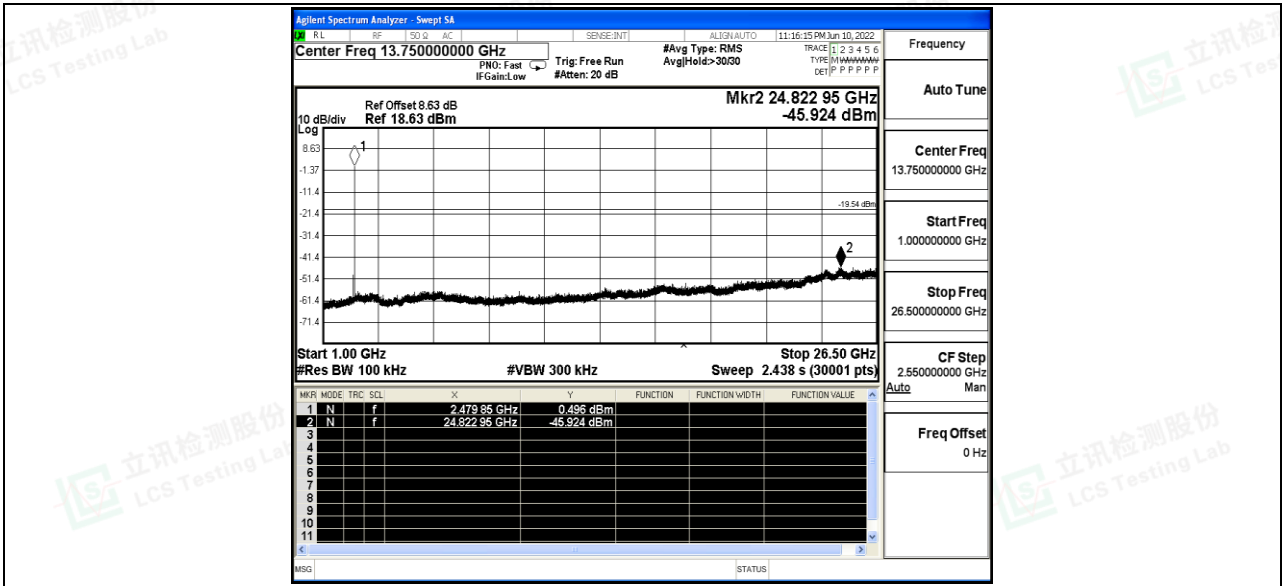


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B.6 Duty Cycle

Test Result

TestMode	Antenna	Channel	ON Time [ms]	Period [ms]	X	DC [%]	xFactor	1/T	Limit	Verdict
BLE	Ant	2402	0.39	0.63	0.6190	61.90	2.08	2.56	---	---
		2440	0.38	0.63	0.6032	60.32	2.20	2.63	---	---
		2480	0.38	0.63	0.6032	60.32	2.20	2.63	---	---



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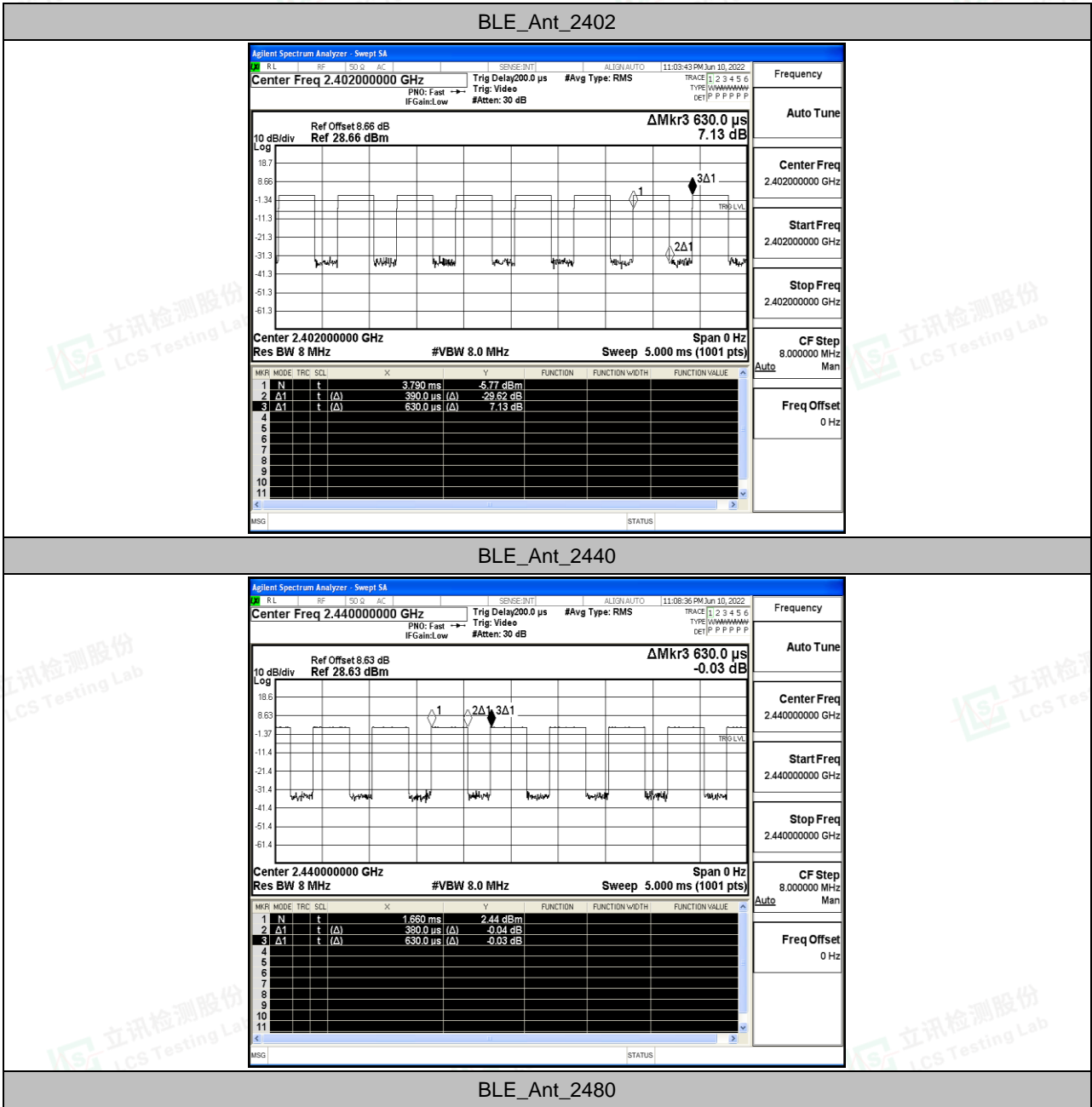
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Test Graphs

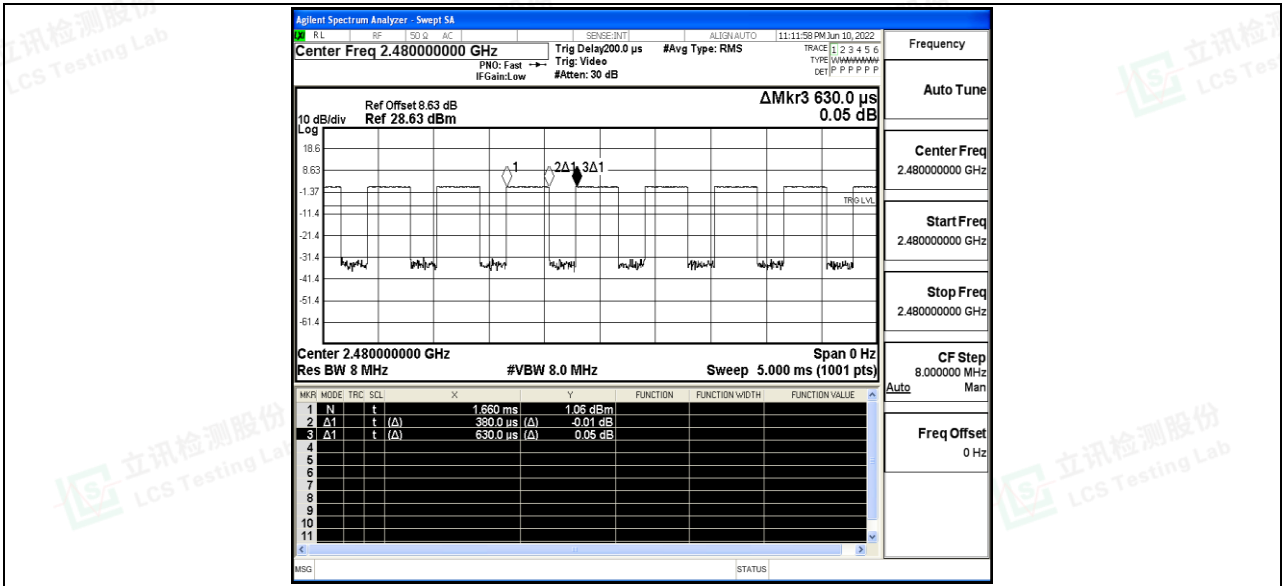


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B.7 Emissions in Restricted Bands

Test Result

TestMode	Antenna	ChName	Channel	Detector	Freq. [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
BLE	Ant	Low	2402	AV	2310.000	-57.28	≤-41.20	37.92	≤54	PASS
				AV	2384.420	-56.43	≤-41.20	38.77	≤54	PASS
				AV	2390.000	-56.82	≤-41.20	38.38	≤54	PASS
				Peak	2310.000	-47.67	≤-21.20	47.53	≤74	PASS
				Peak	2385.995	-46.65	≤-21.20	48.55	≤74	PASS
				Peak	2390.000	-47.2	≤-21.20	48.00	≤74	PASS
		High	2480	AV	2483.500	-52.55	≤-41.20	42.65	≤54	PASS
				AV	2483.520	-52.84	≤-41.20	42.36	≤54	PASS
				AV	2500.000	-56.32	≤-41.20	38.88	≤54	PASS
				Peak	2483.500	-46.99	≤-21.20	48.21	≤74	PASS
				Peak	2485.600	-46.15	≤-21.20	49.05	≤74	PASS
				Peak	2500.000	-48.06	≤-21.20	47.14	≤74	PASS

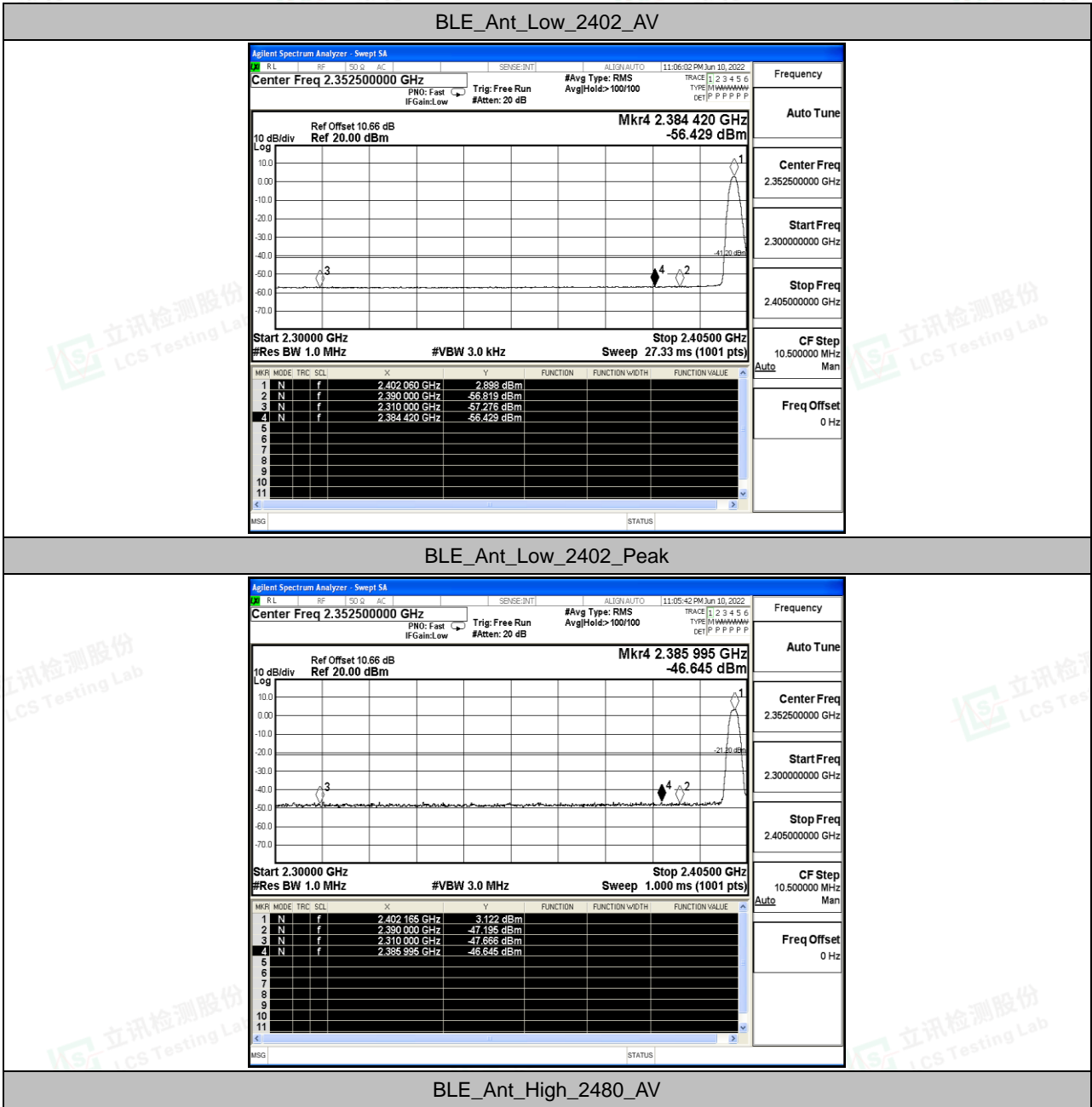
Note:

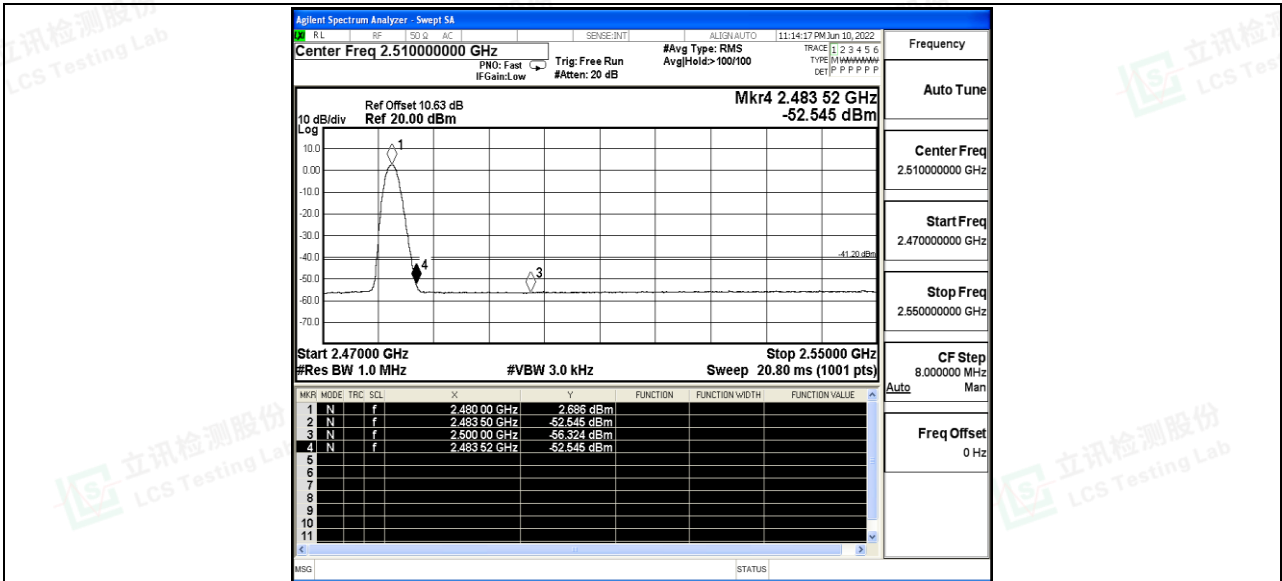
- The Antenna Gain is compensated in the graph.
- The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.



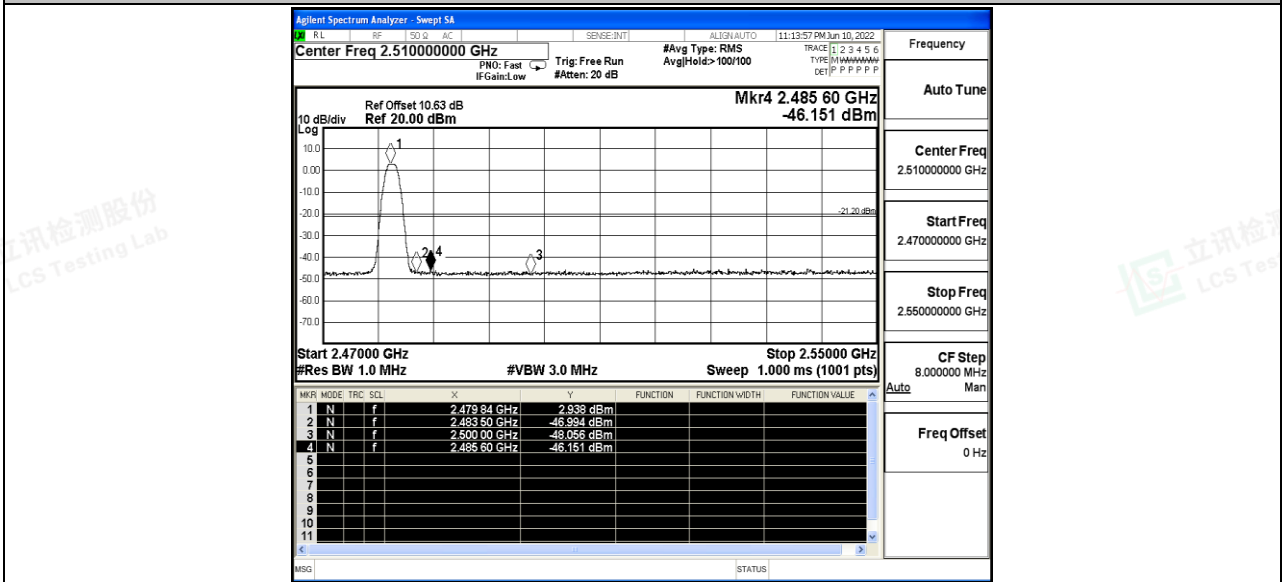


Test Graphs





BLE_Ant_High_2480_Peak



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