



Appendix A

RF Test Data for BLE (Conducted Measurement)

Product Name: IWARM SYSTEM
Test Model: V1.4

Environmental Conditions

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





A.1 6dB Bandwidth

Test Result

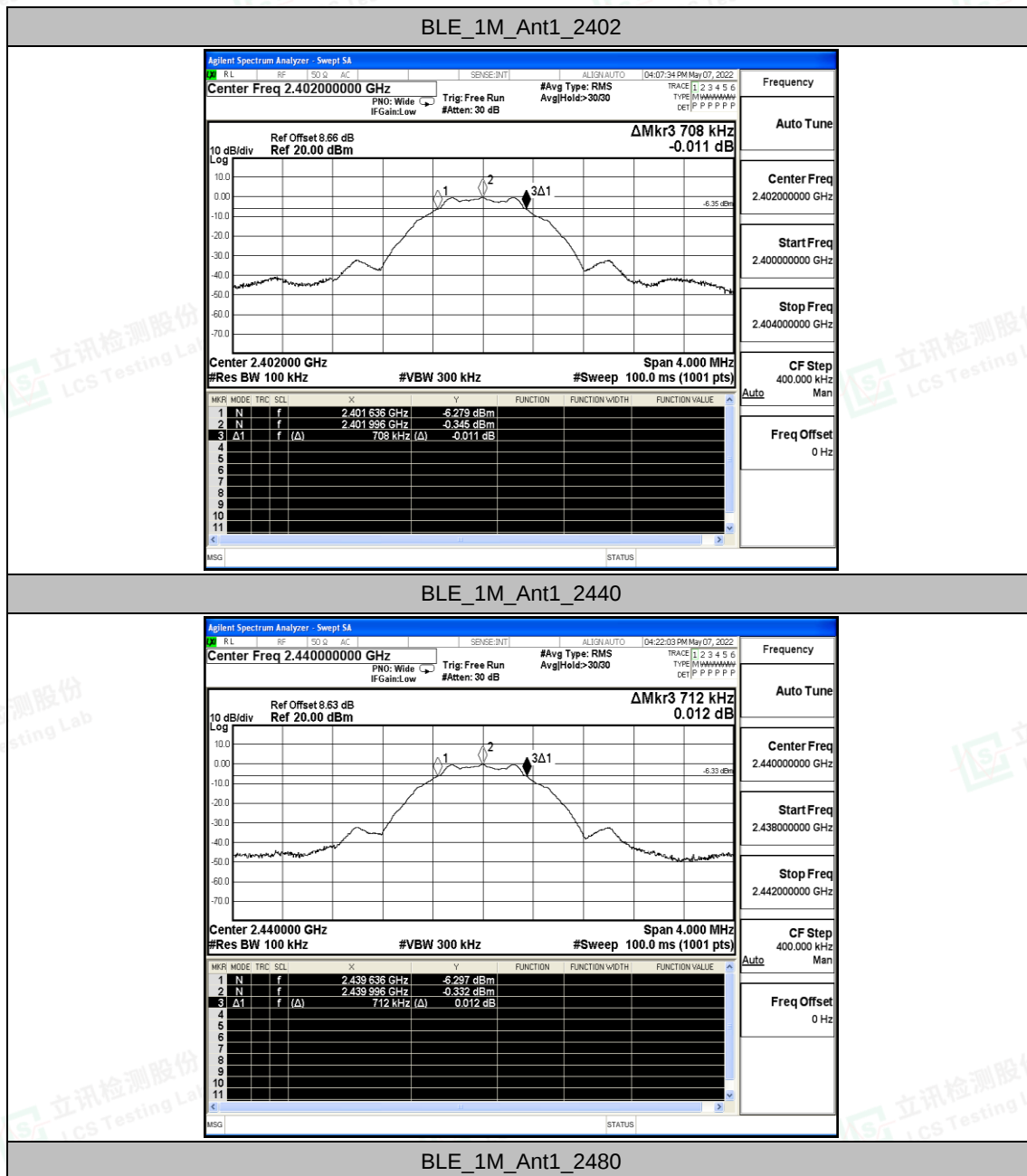
TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.708	2401.636	2402.344	0.5	PASS
		2440	0.712	2439.636	2440.348	0.5	PASS
		2480	0.712	2479.636	2480.348	0.5	PASS

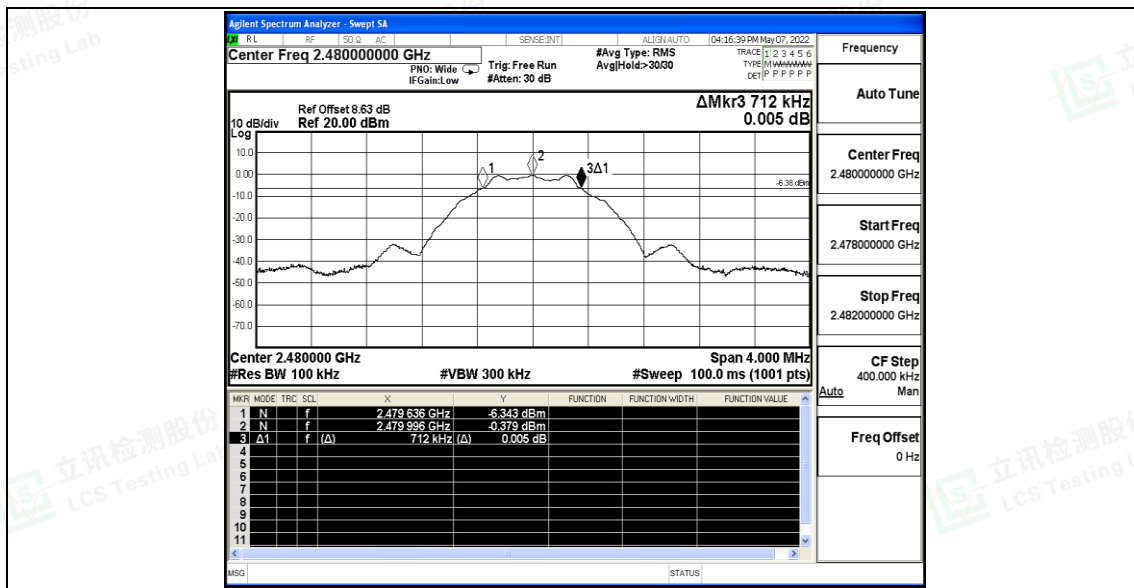


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Test Graphs







A.2 Occupied Channel Bandwidth

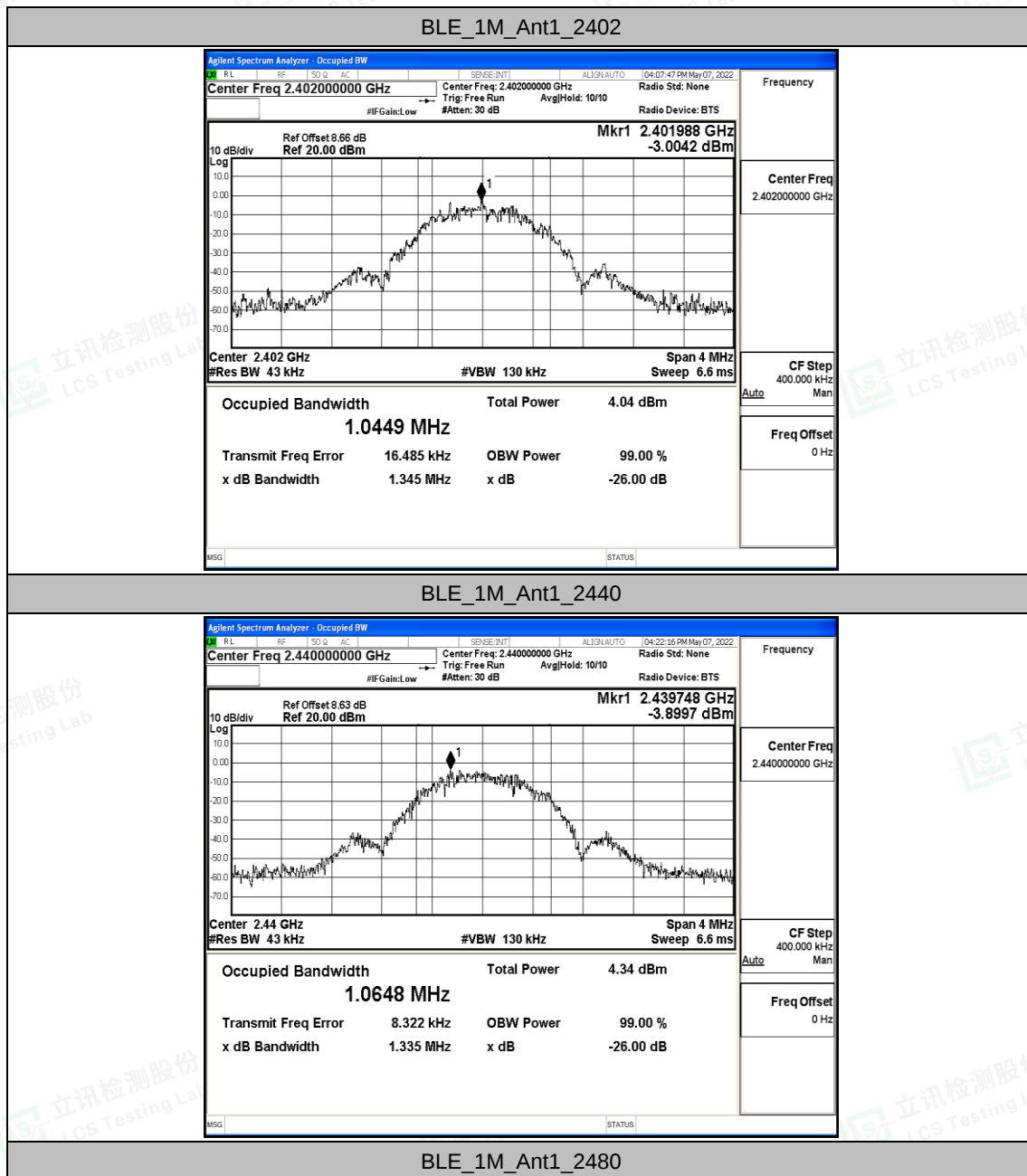
Test Result

TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0449	2401.494	2402.539	---	---
		2440	1.0648	2439.476	2440.541	---	---
		2480	1.0708	2479.471	2480.542	---	---





Test Graphs

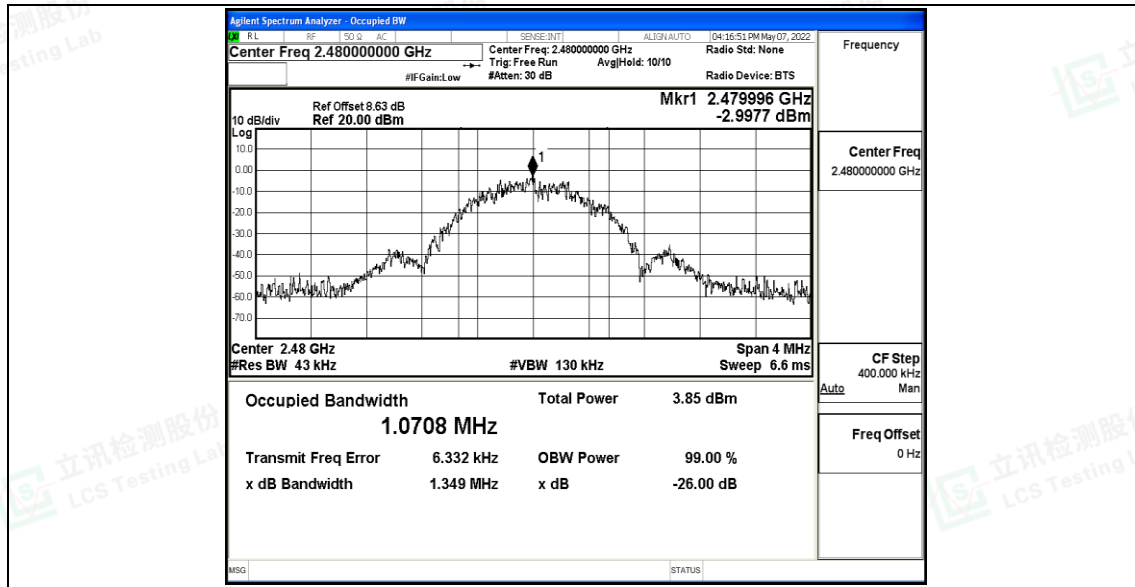


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A.3 Maximum conducted output power

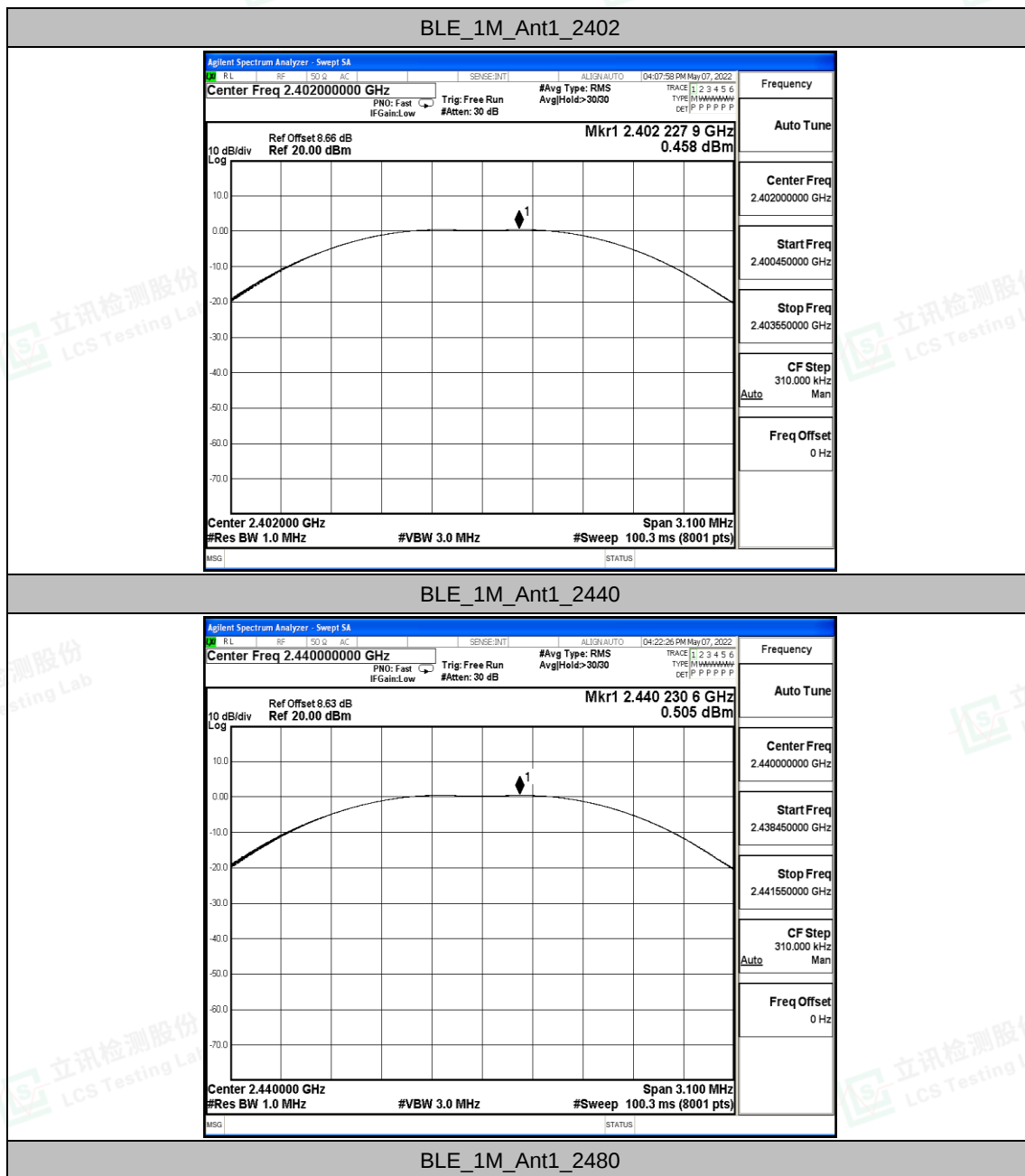
Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	0.46	≤30	PASS
		2440	0.51	≤30	PASS
		2480	0.45	≤30	PASS





Test Graphs

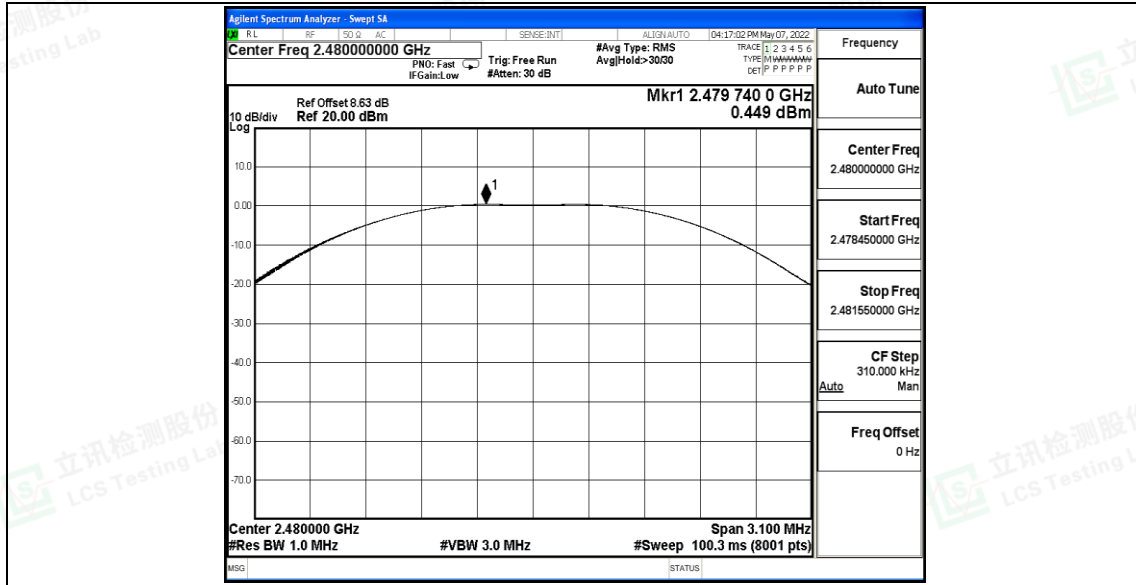


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A.4 Maximum power spectral density

Test Result

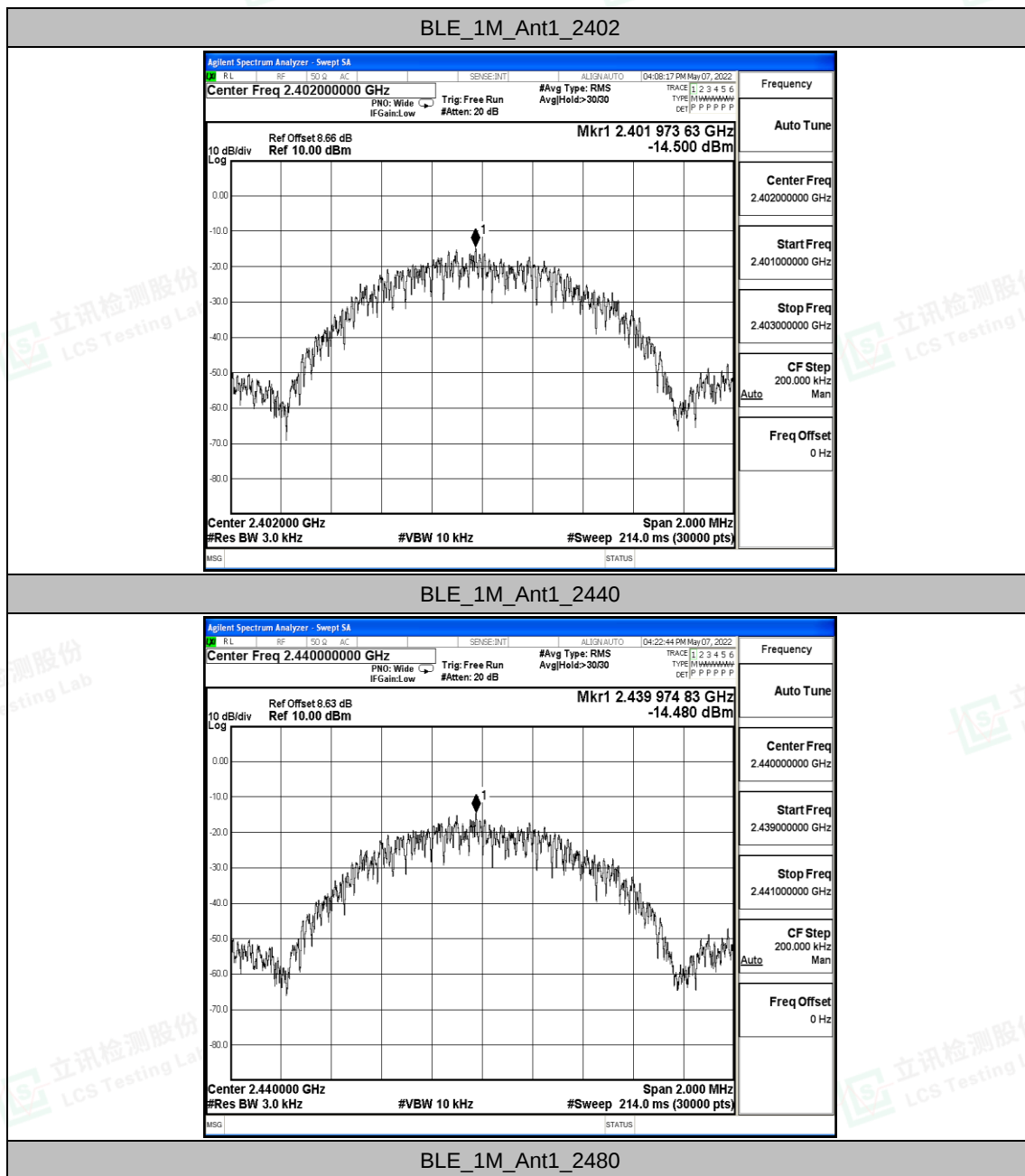
TestMode	Antenna	Channel	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-14.5	≤8.00	PASS
		2440	-14.48	≤8.00	PASS
		2480	-14.52	≤8.00	PASS



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Test Graphs

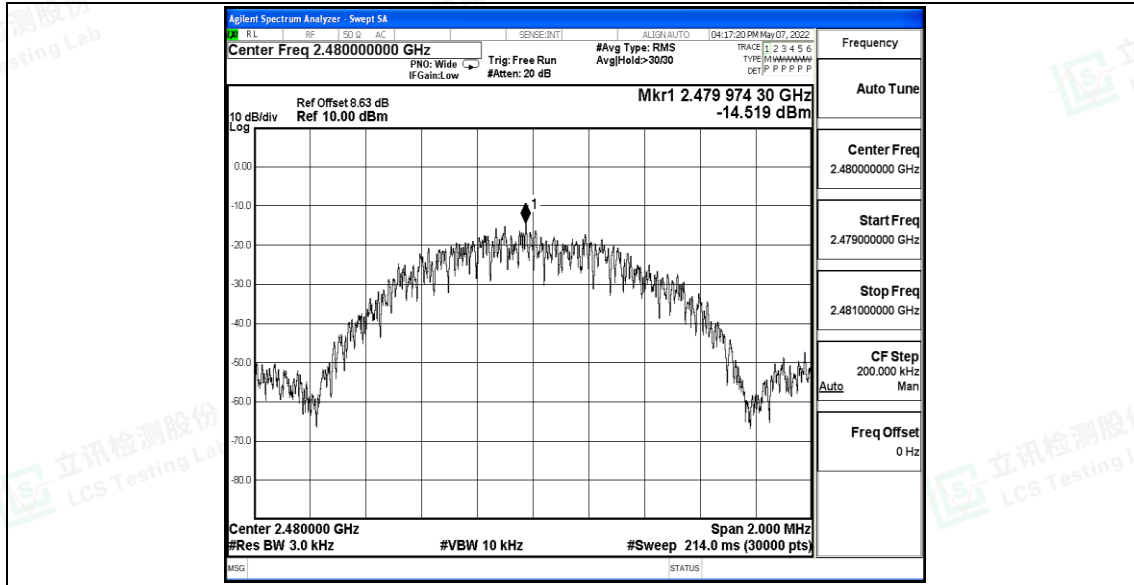


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A.5 Band edge measurements

Test Result

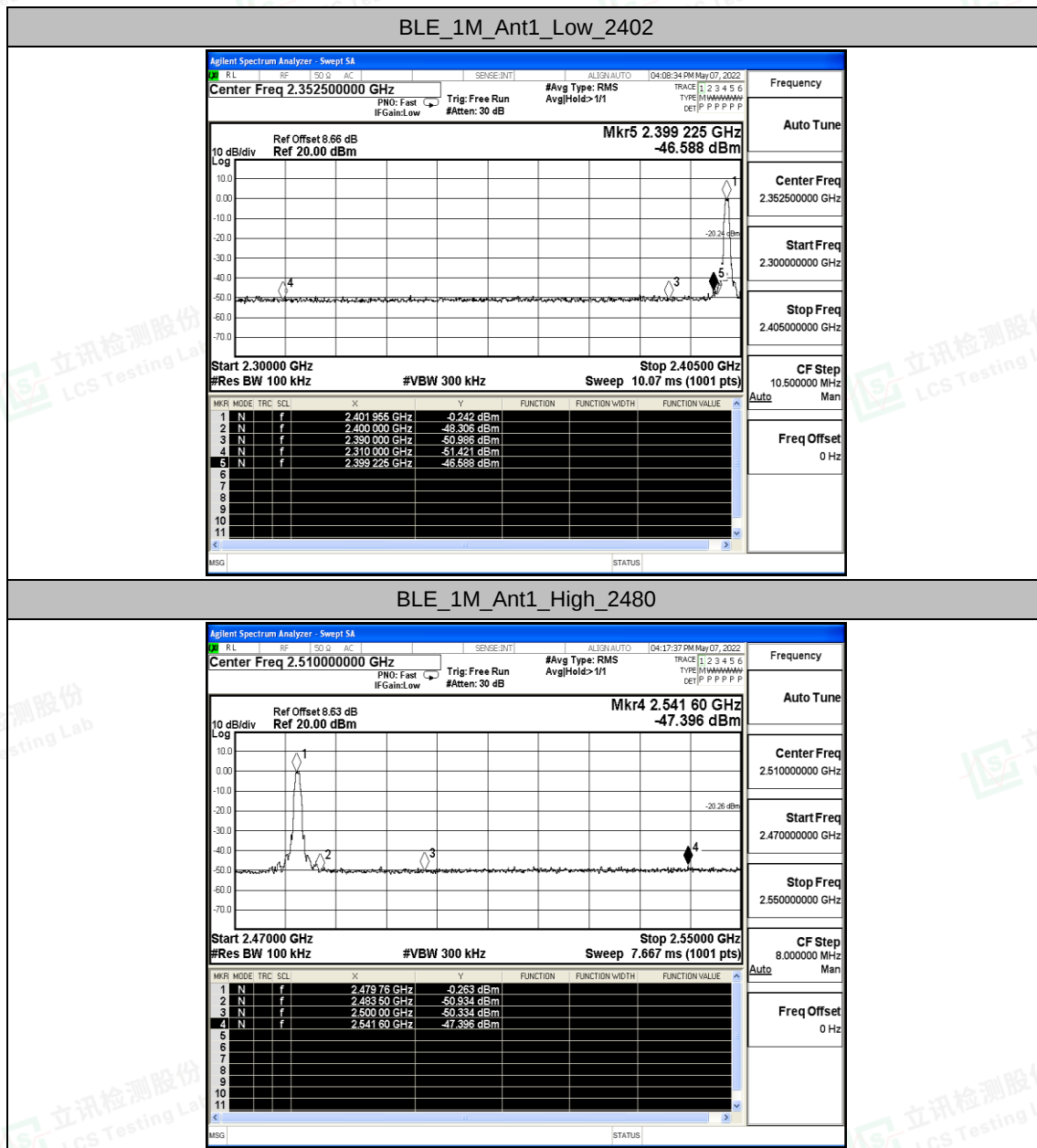
TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	-0.24	-46.59	≤-20.24	PASS
		High	2480	-0.26	-47.4	≤-20.26	PASS



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Test Graphs



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A.6 Conducted Spurious Emission

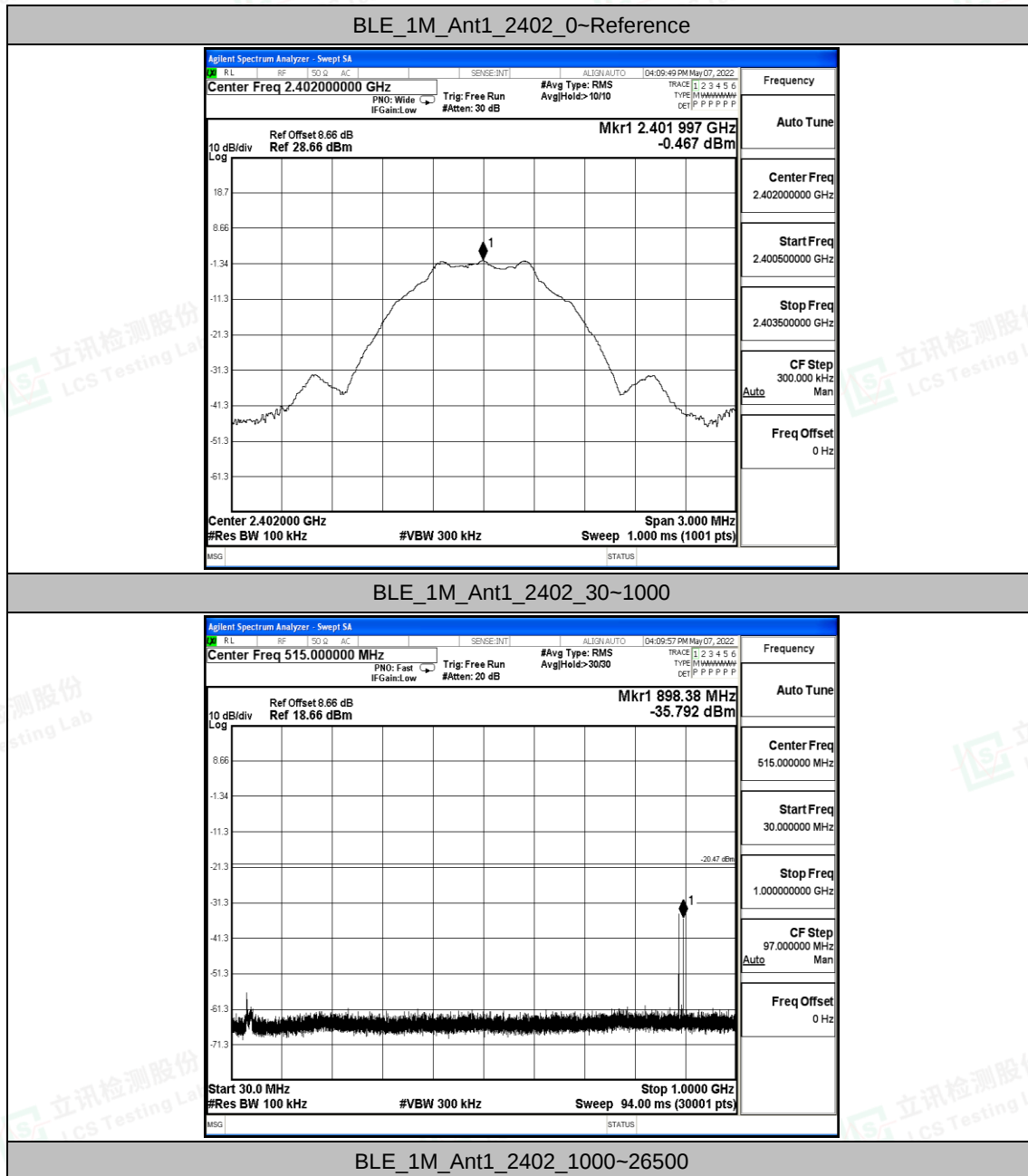
Test Result

TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	-0.47	-0.47	---	PASS
			30~1000	-0.47	-35.79	≤-20.47	PASS
			1000~26500	-0.47	-46.17	≤-20.47	PASS
		2440	Reference	-0.34	-0.34	---	PASS
			30~1000	-0.34	-60.54	≤-20.34	PASS
			1000~26500	-0.34	-42.55	≤-20.34	PASS
		2480	Reference	-0.41	-0.41	---	PASS
			30~1000	-0.41	-60.32	≤-20.41	PASS
			1000~26500	-0.41	-41.03	≤-20.41	PASS





Test Graphs

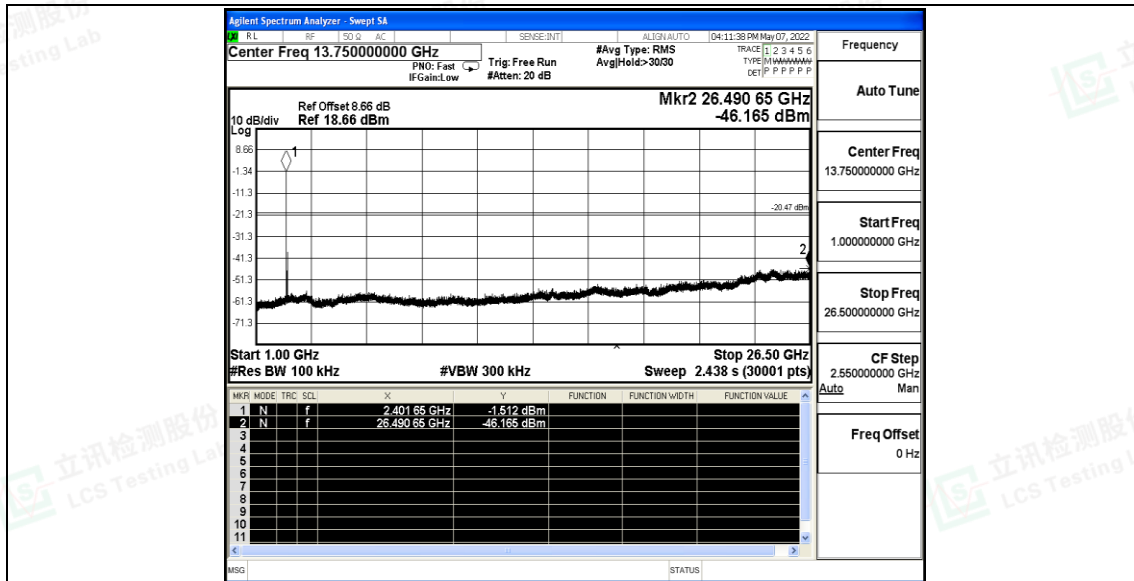


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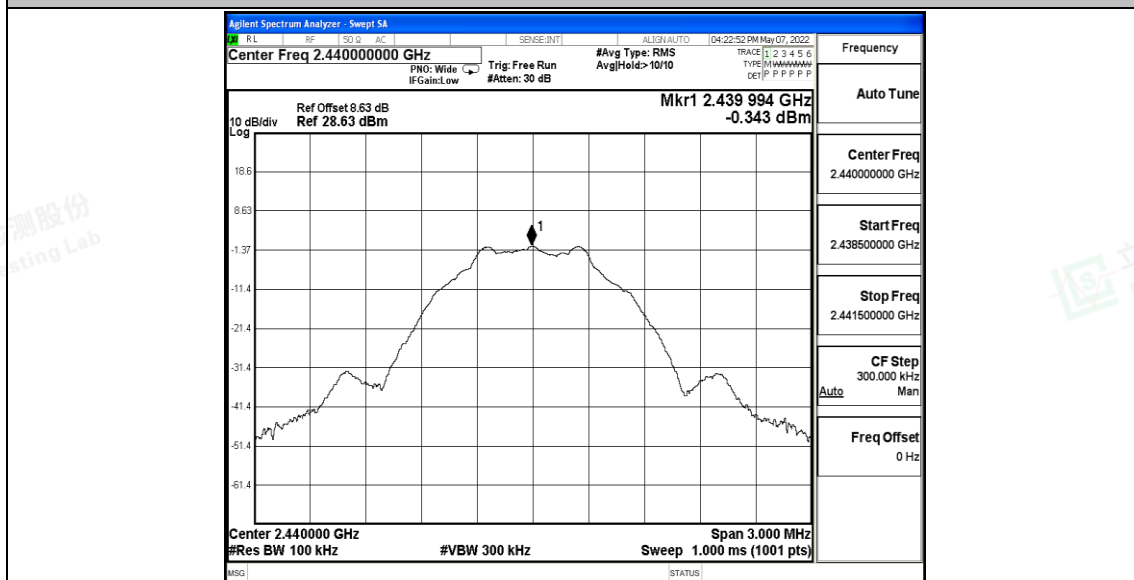
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BLE_1M_Ant1_2440_0~Reference



BLE_1M_Ant1_2440_30~1000

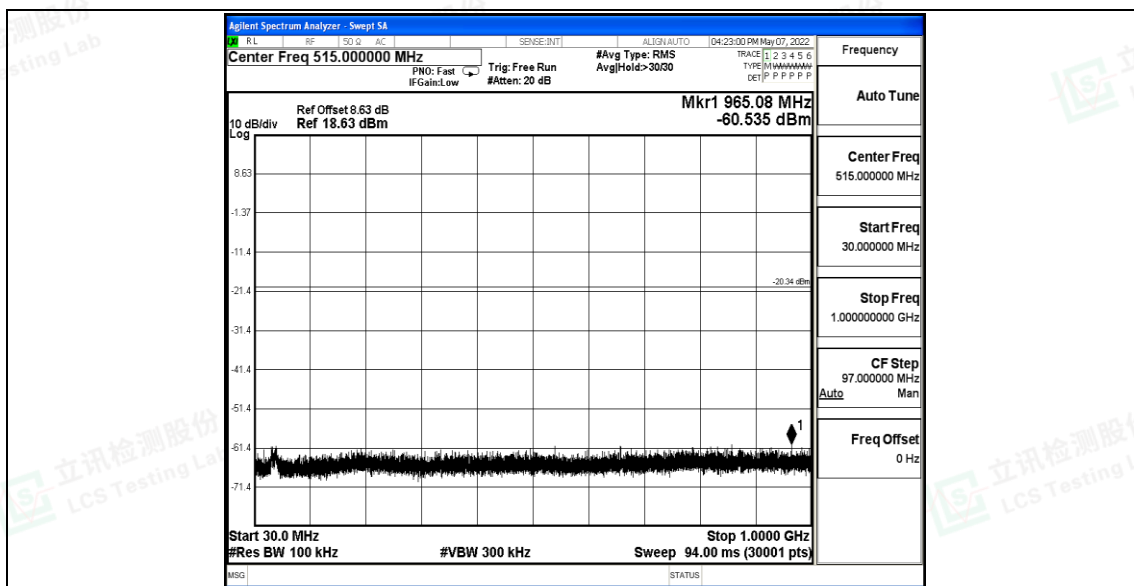


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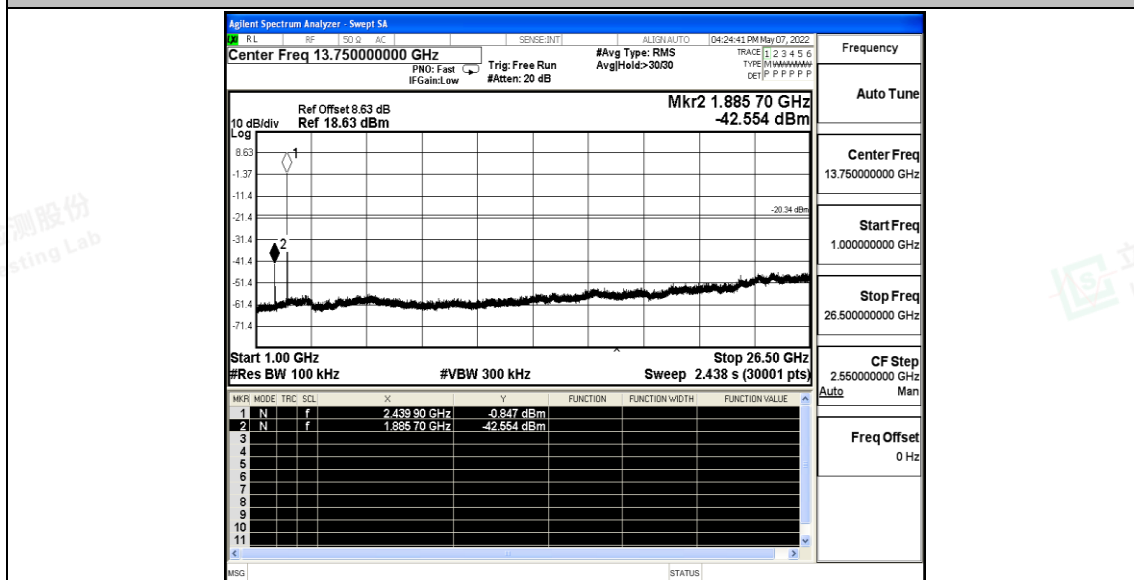
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BLE_1M_Ant1_2440_1000~26500



BLE_1M_Ant1_2480_0~Reference

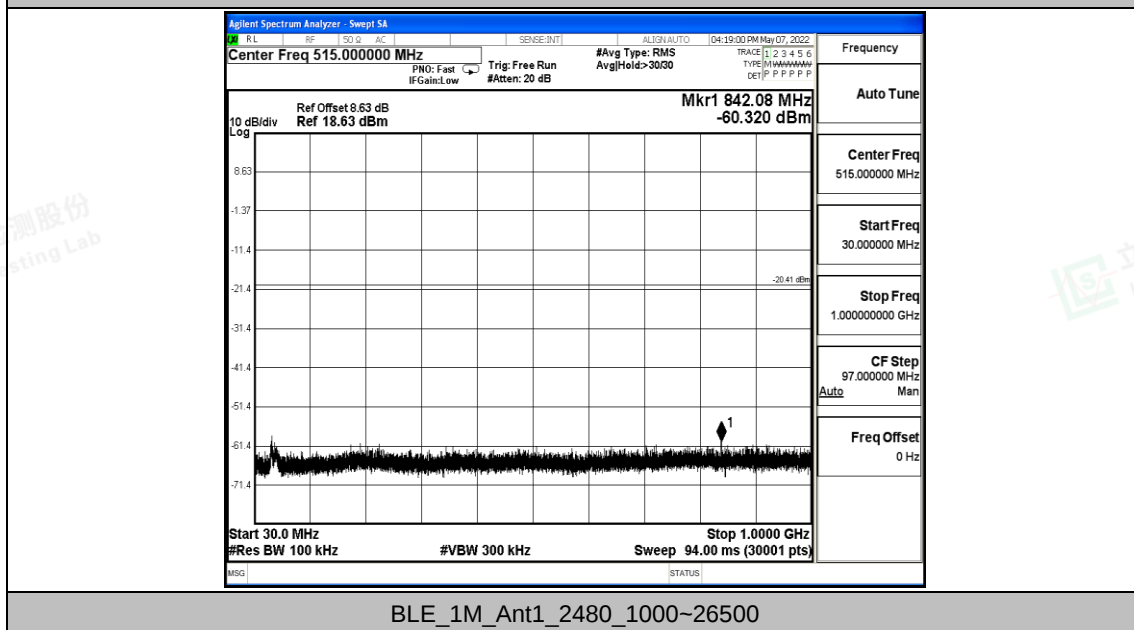
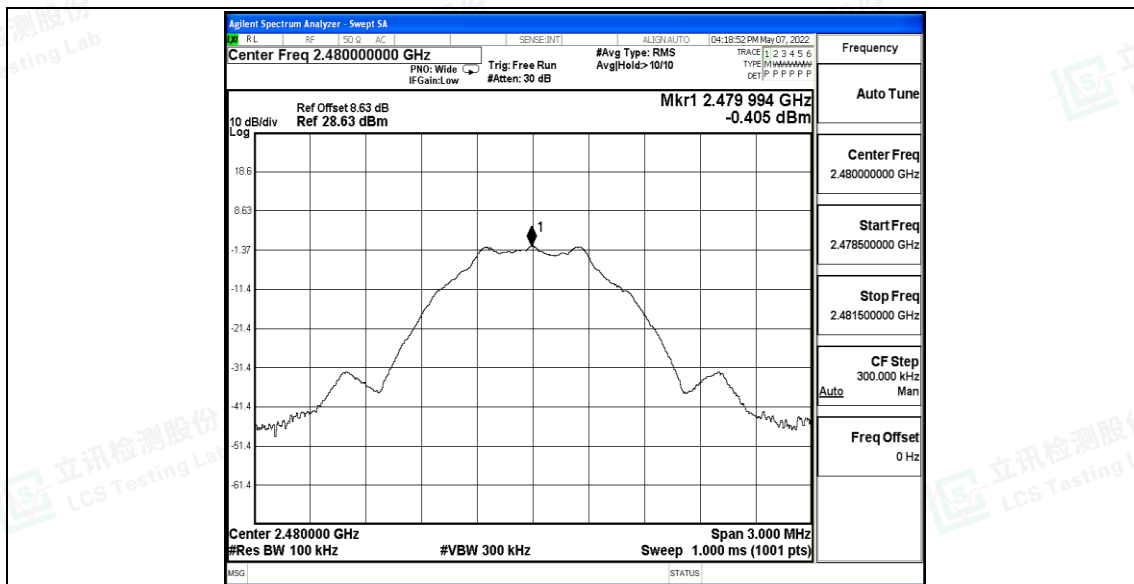


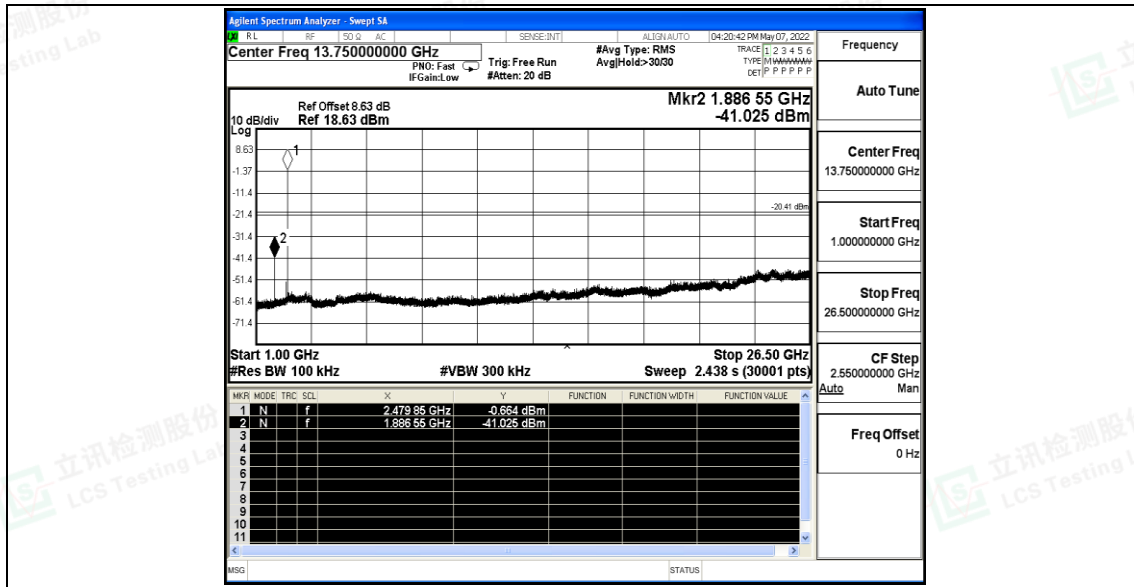
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A.7 Duty Cycle

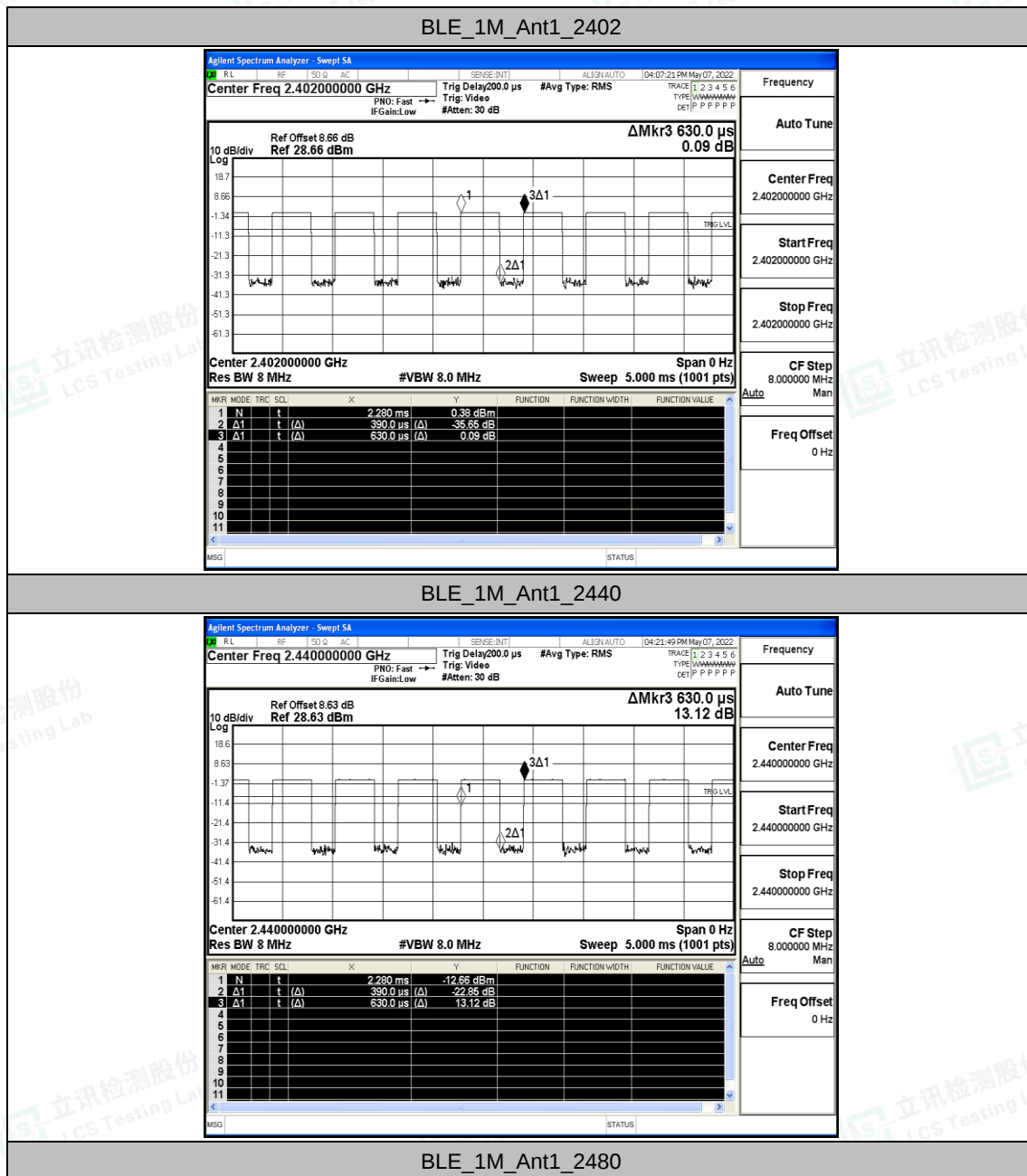
Test Result

TestMode	Antenna	Channel	ON Time [ms]	Period [ms]	X	DC [%]	xFactor	Limit	Verdict
BLE_1M	Ant1	2402	0.39	0.63	0.6190	61.90	2.08	---	---
		2440	0.39	0.63	0.6190	61.90	2.08	---	---
		2480	0.39	0.63	0.6190	61.90	2.08	---	---





Test Graphs

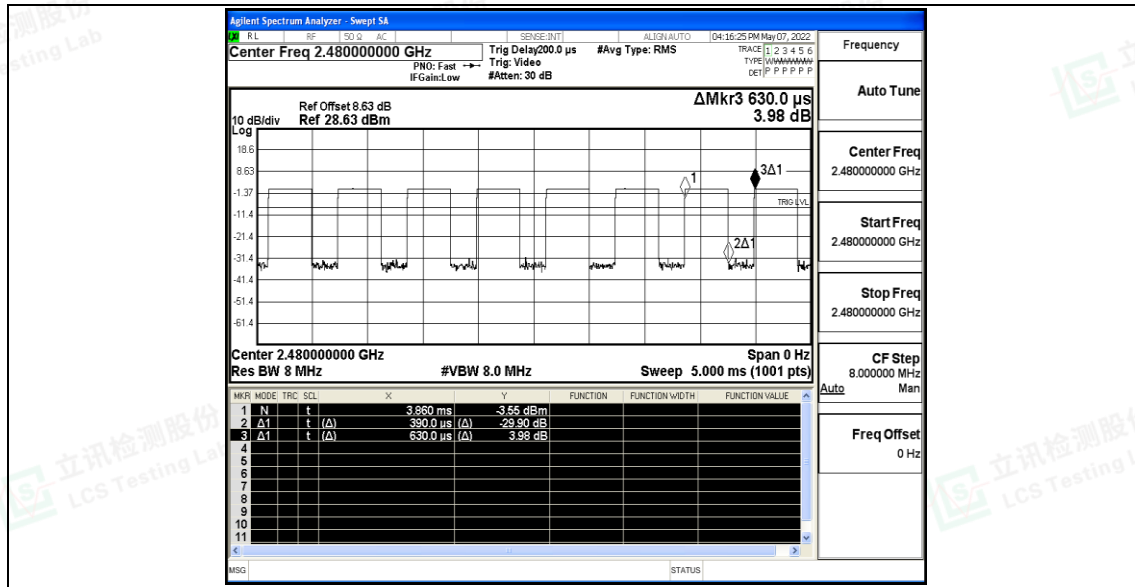


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A.8 Emissions in Restricted Bands

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	-47.16	≤-41.20	48.04	≤54	PASS
				AV	2389.145	-46.64	≤-41.20	48.56	≤54	PASS
				AV	2390.000	-47.18	≤-41.20	48.02	≤54	PASS
				Peak	2310.000	-38.3	≤-21.20	56.90	≤74	PASS
				Peak	2385.890	-36.77	≤-21.20	58.43	≤74	PASS
				Peak	2390.000	-38.5	≤-21.20	56.70	≤74	PASS
		High	2480	AV	2483.500	-46.17	≤-41.20	49.03	≤54	PASS
				AV	2483.600	-45.99	≤-41.20	49.21	≤54	PASS
				AV	2500.000	-46.45	≤-41.20	48.75	≤54	PASS
				Peak	2483.500	-32.54	≤-21.20	62.66	≤74	PASS
				Peak	2483.520	-32.54	≤-21.20	62.66	≤74	PASS
				Peak	2500.000	-37.48	≤-21.20	57.72	≤74	PASS

Note:

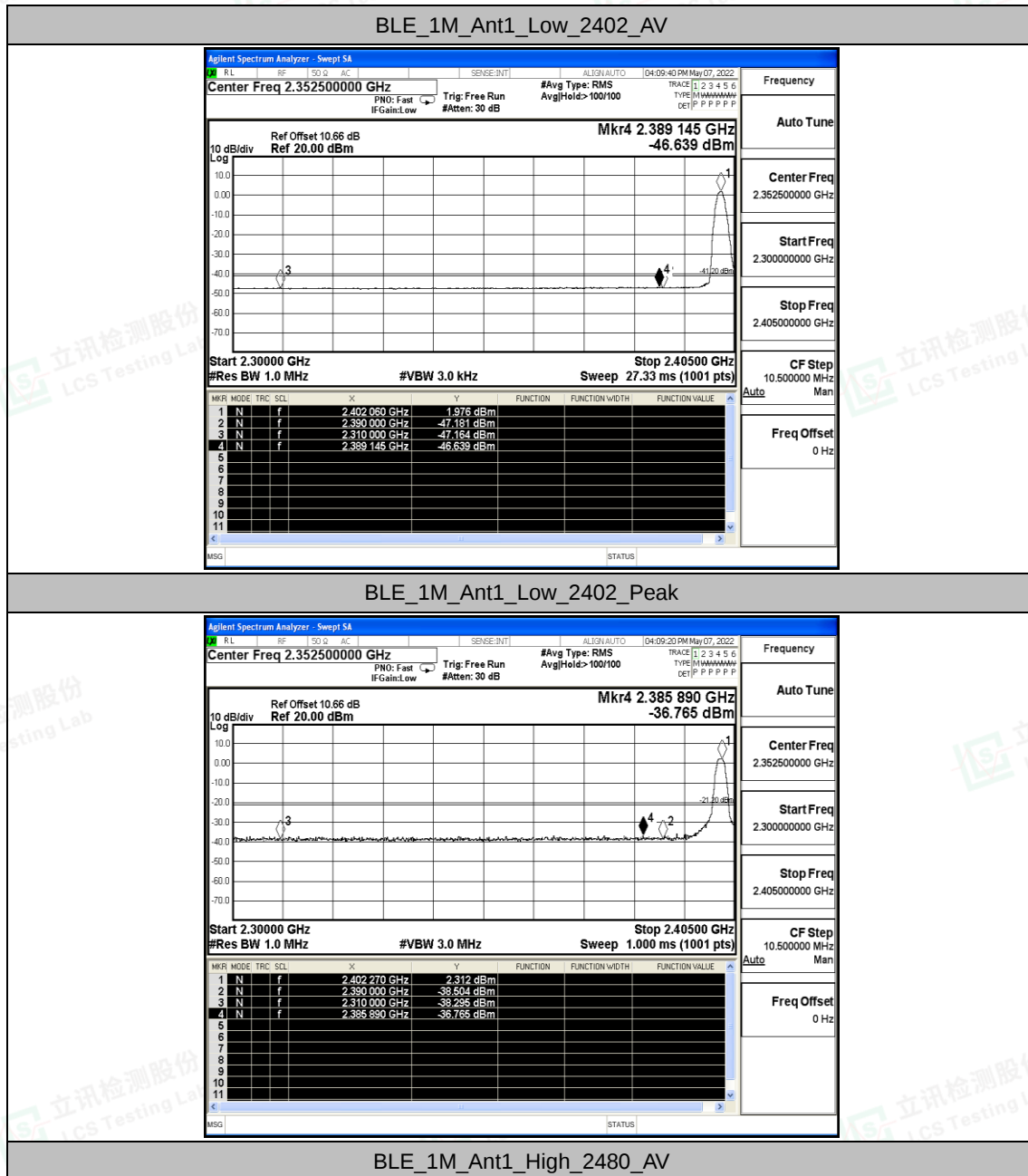
1. The Antenna Gain is compensated in the graph.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.



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Test Graphs



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