



Appendix B

RF Test Data for BT LE (Conducted Measurement)

Product Name: Personal Mobile Alarm System

Test Model: PAL 4

Environmental Conditions

Temperature:	23.9° C
Relative Humidity:	52.2%
ATM Pressure:	100.0 kPa
Test Engineer:	Ling Zhu
Supervised by:	Li huan





B.1 6dB Bandwidth

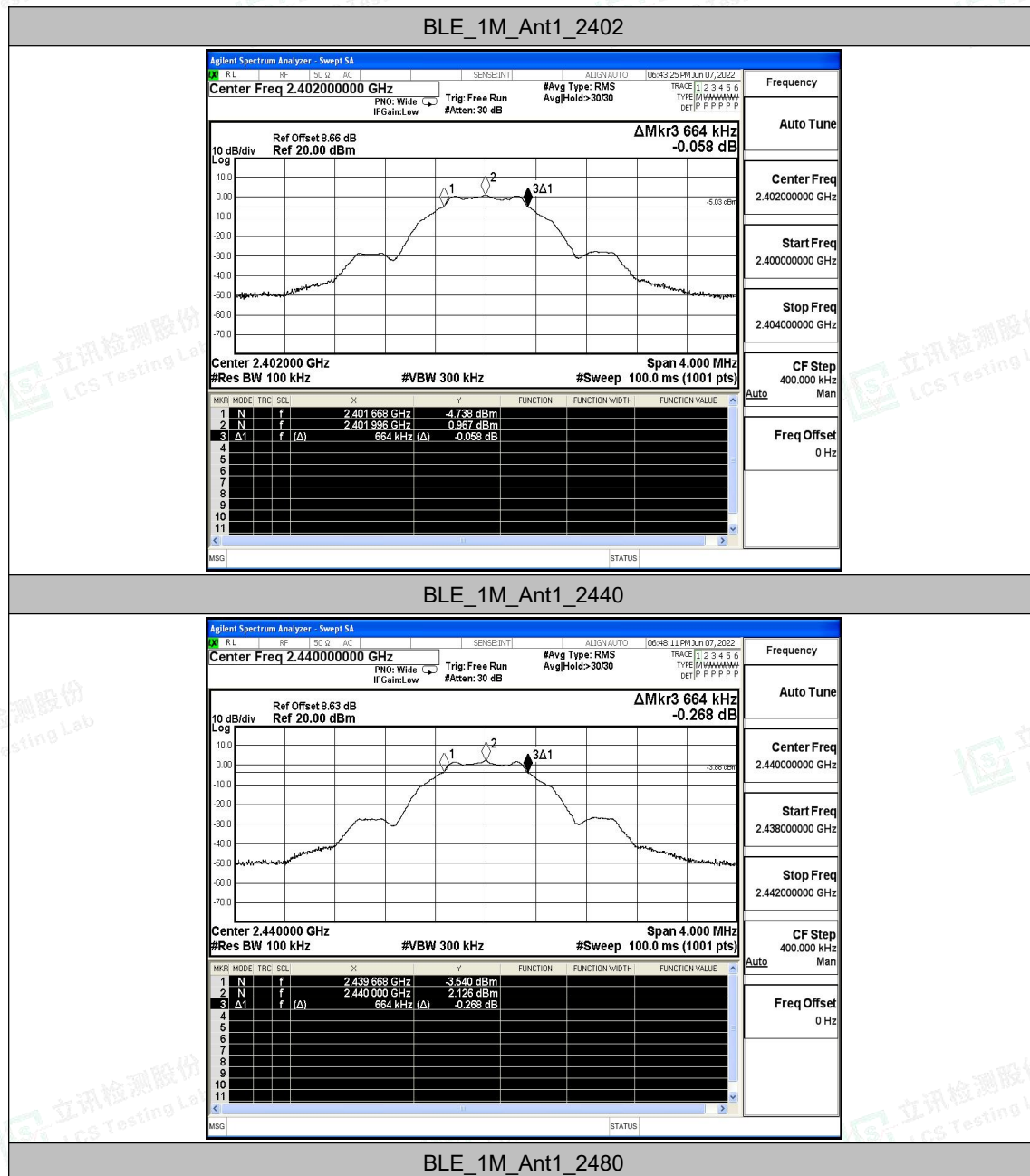
Test Result

TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.664	2401.668	2402.332	0.5	PASS
		2440	0.664	2439.668	2440.332	0.5	PASS
		2480	0.668	2479.664	2480.332	0.5	PASS





Test Graphs

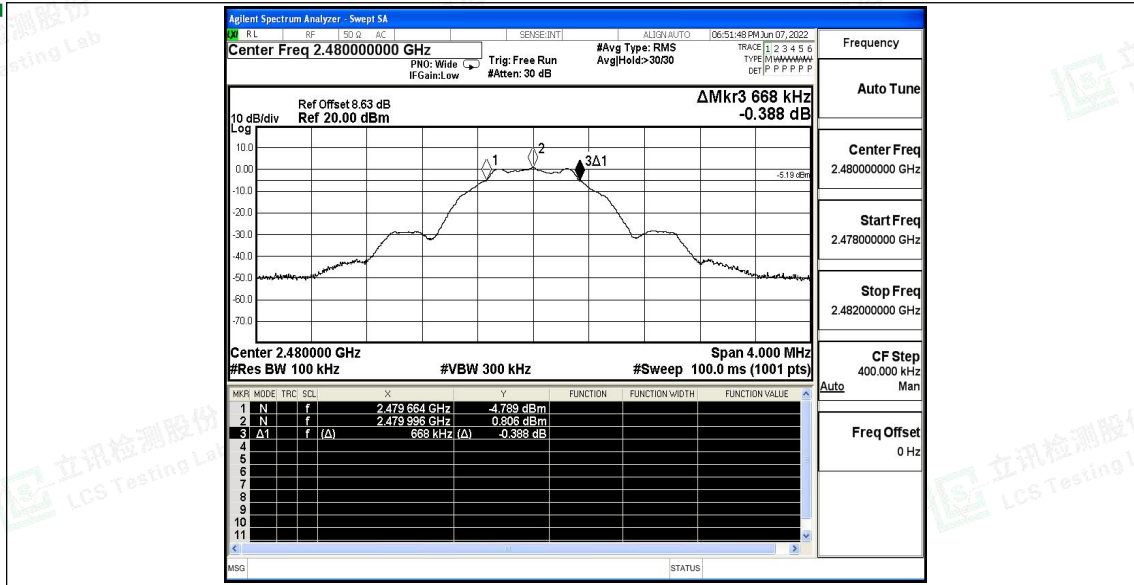


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B.2 Occupied Channel Bandwidth

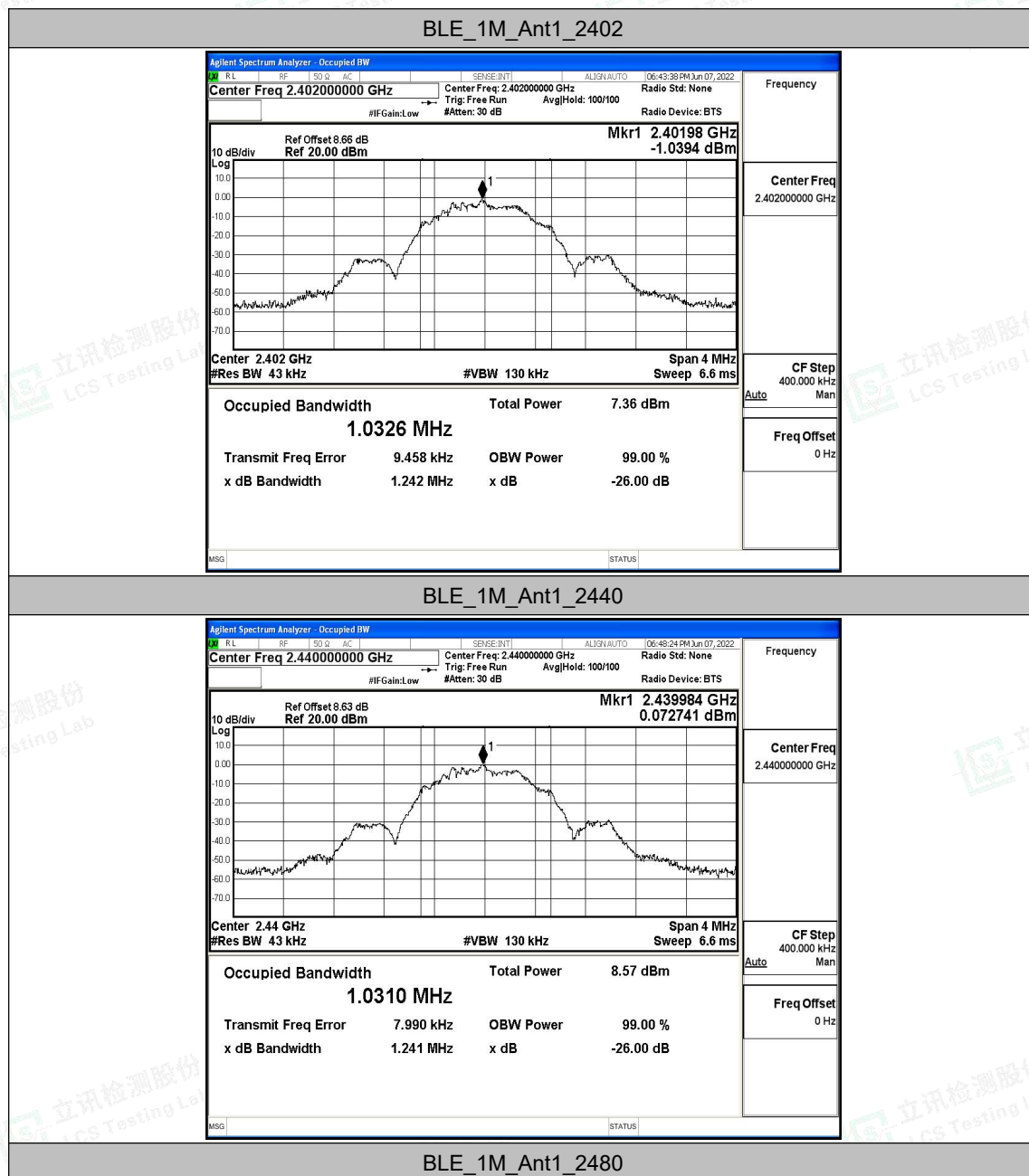
Test Result

TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0326	2401.493	2402.526	---	---
		2440	1.0310	2439.492	2440.523	---	---
		2480	1.0265	2479.491	2480.518	---	---





Test Graphs

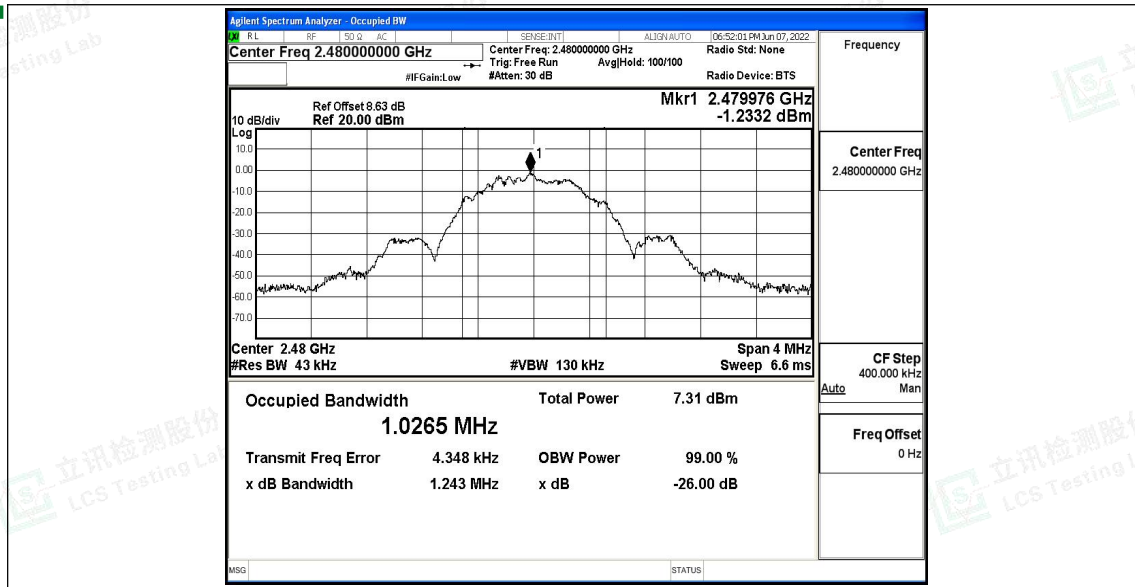


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B.3 Maximum conducted output power

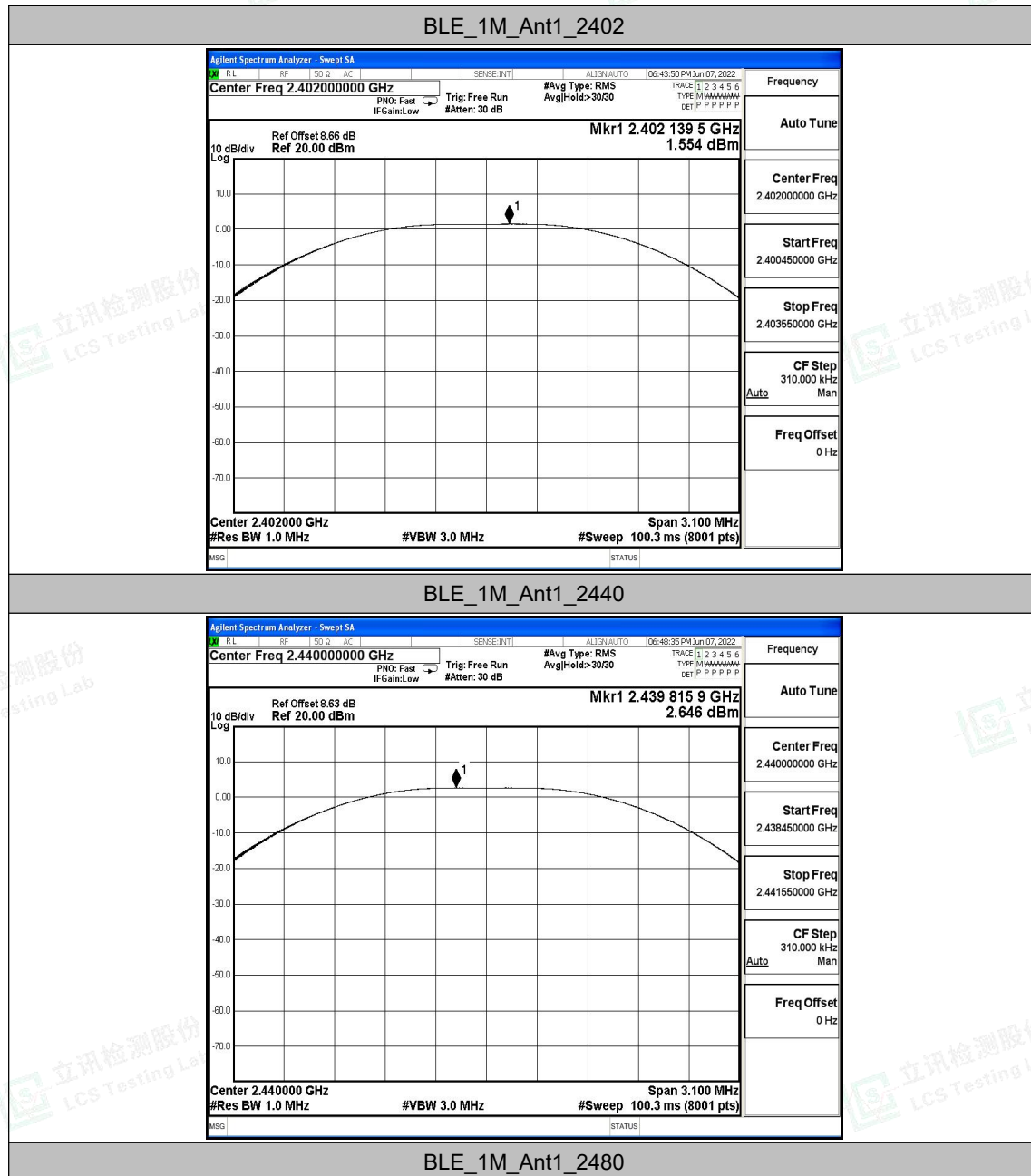
Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	1.55	≤30	PASS
		2440	2.65	≤30	PASS
		2480	1.35	≤30	PASS





Test Graphs

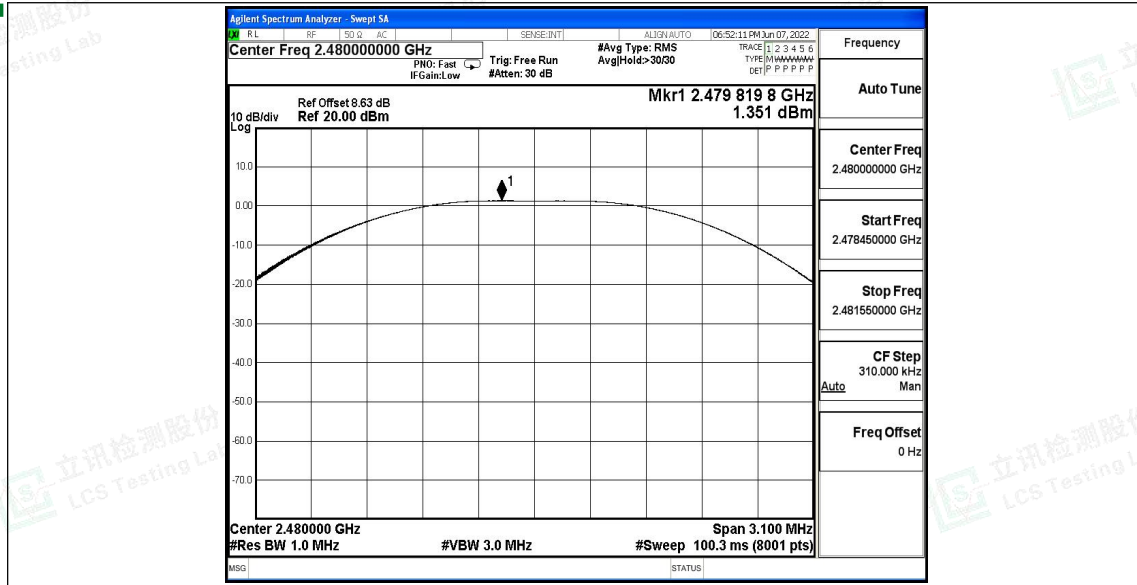


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B.4 Maximum power spectral density

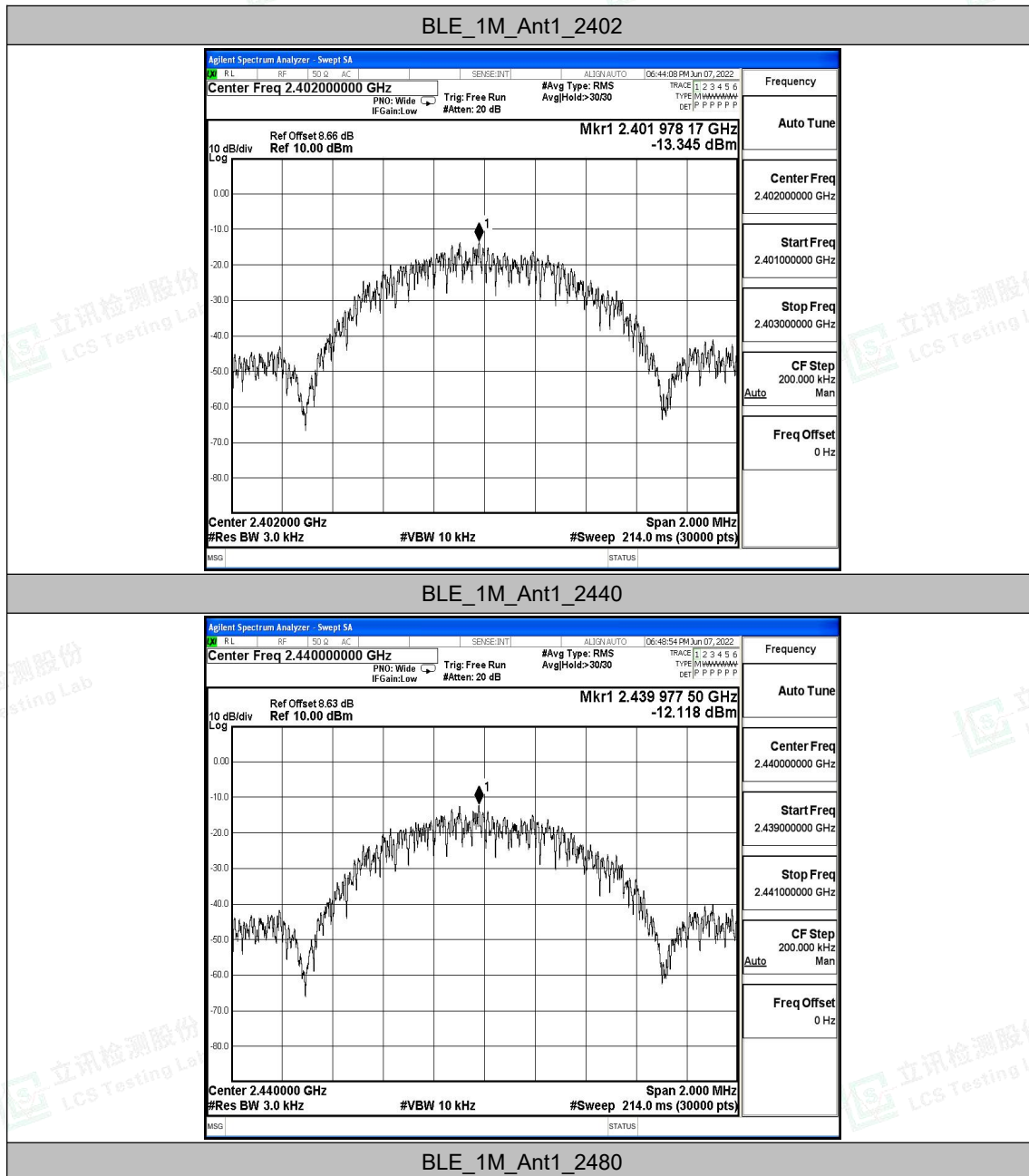
Test Result

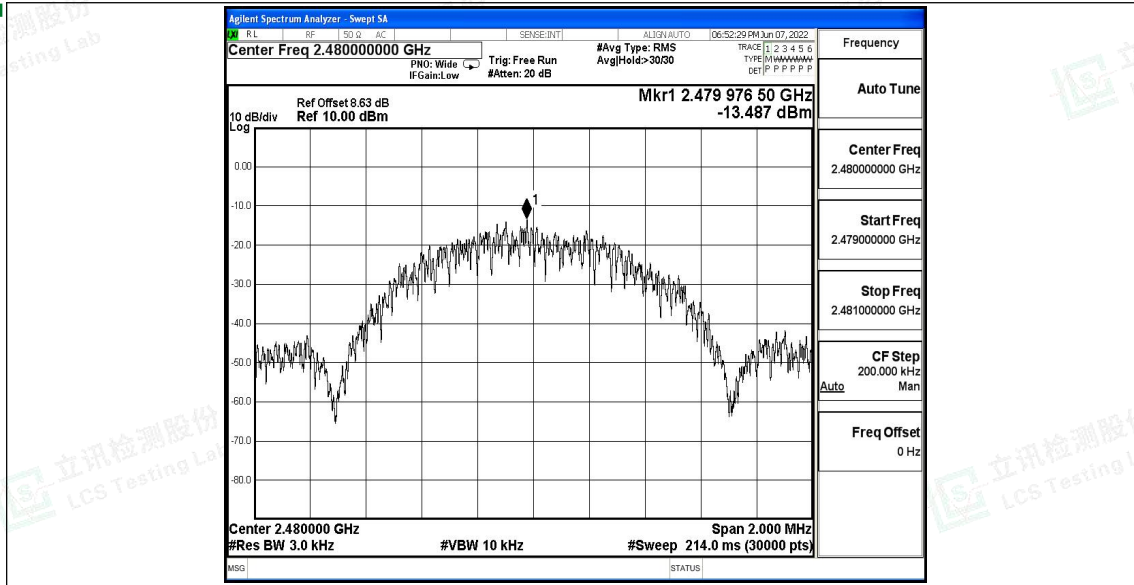
TestMode	Antenna	Channel	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-13.35	≤8.00	PASS
		2440	-12.12	≤8.00	PASS
		2480	-13.49	≤8.00	PASS





Test Graphs







B.5 Band edge measurements

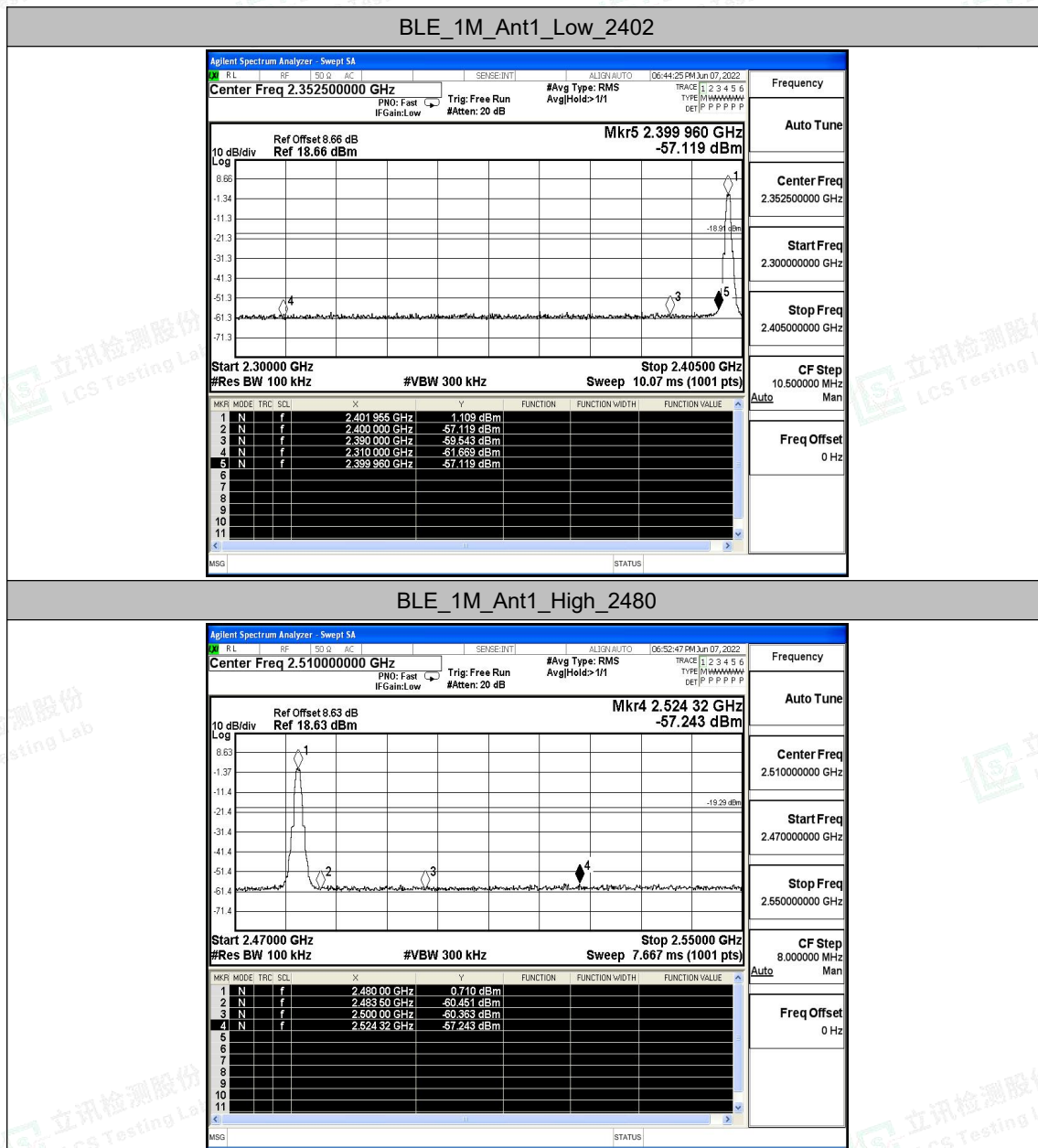
Test Result

TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	1.09	-57.12	≤-18.91	PASS
		High	2480	0.71	-57.24	≤-19.29	PASS





Test Graphs



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B.6 Conducted Spurious Emission

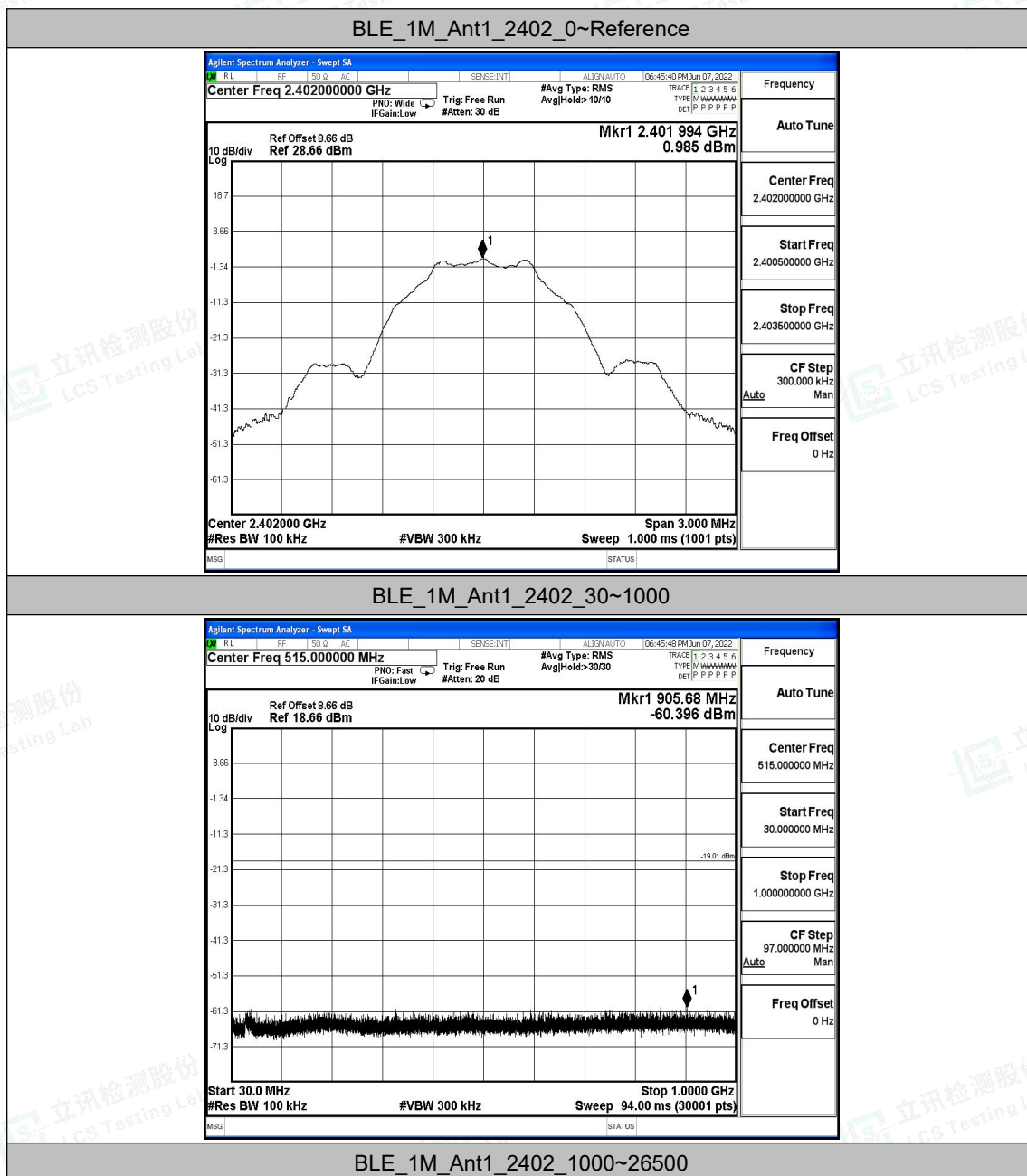
Test Result

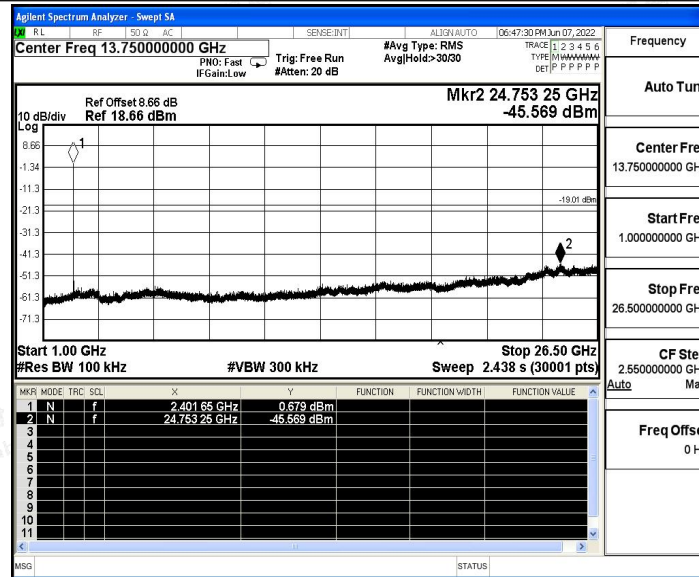
TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	0.99	0.99	---	PASS
			30~1000	0.99	-60.4	≤-19.01	PASS
			1000~26500	0.99	-45.57	≤-19.01	PASS
		2440	Reference	2.13	2.13	---	PASS
			30~1000	2.13	-59.72	≤-17.87	PASS
			1000~26500	2.13	-46.16	≤-17.87	PASS
		2480	Reference	0.58	0.58	---	PASS
			30~1000	0.58	-60.17	≤-19.42	PASS
			1000~26500	0.58	-45.69	≤-19.42	PASS



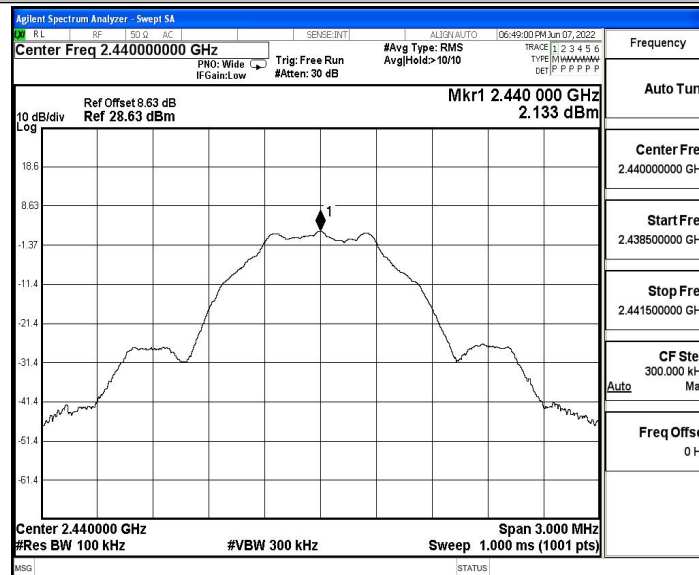


Test Graphs





BLE_1M_Ant1_2440_0~Reference



BLE_1M_Ant1_2440_30~1000

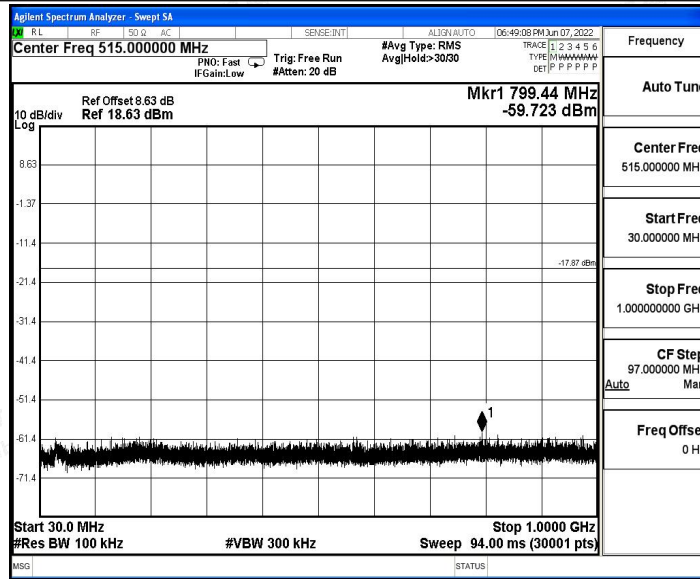


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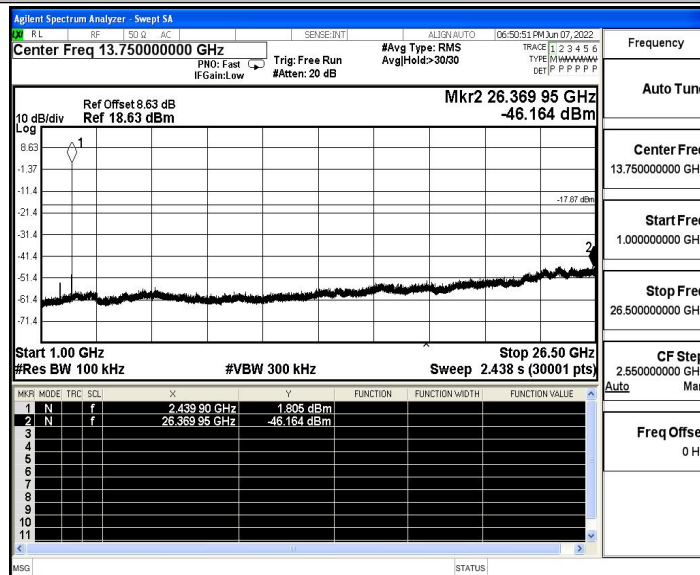
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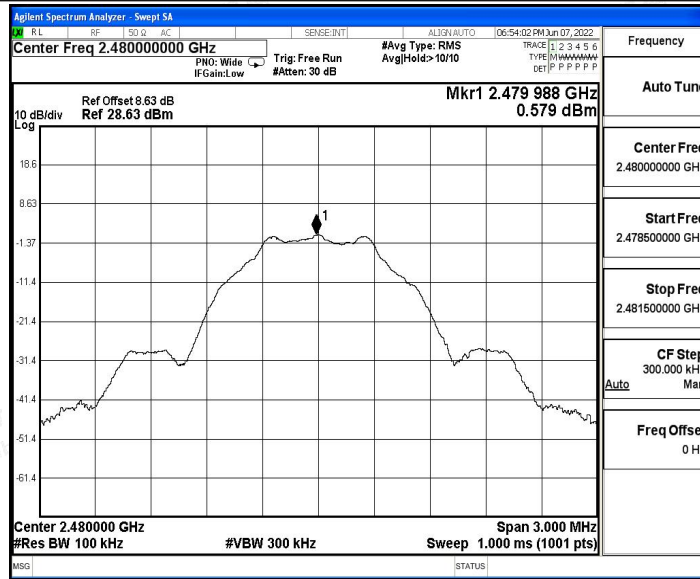


BLE_1M_Ant1_2440_1000~26500

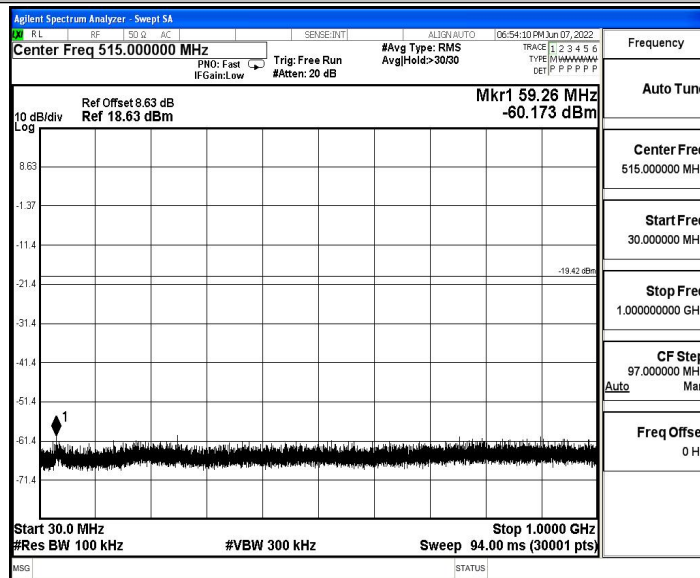


BLE_1M_Ant1_2480_0~Reference



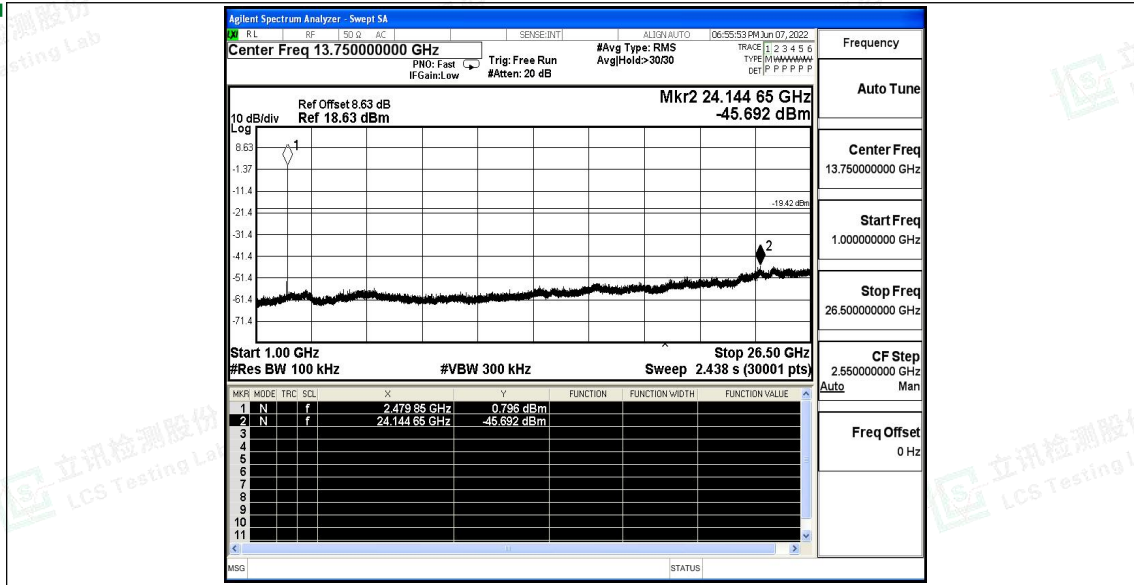


BLE_1M_Ant1_2480_30~1000



BLE_1M_Ant1_2480_1000~26500







B.7 Duty Cycle

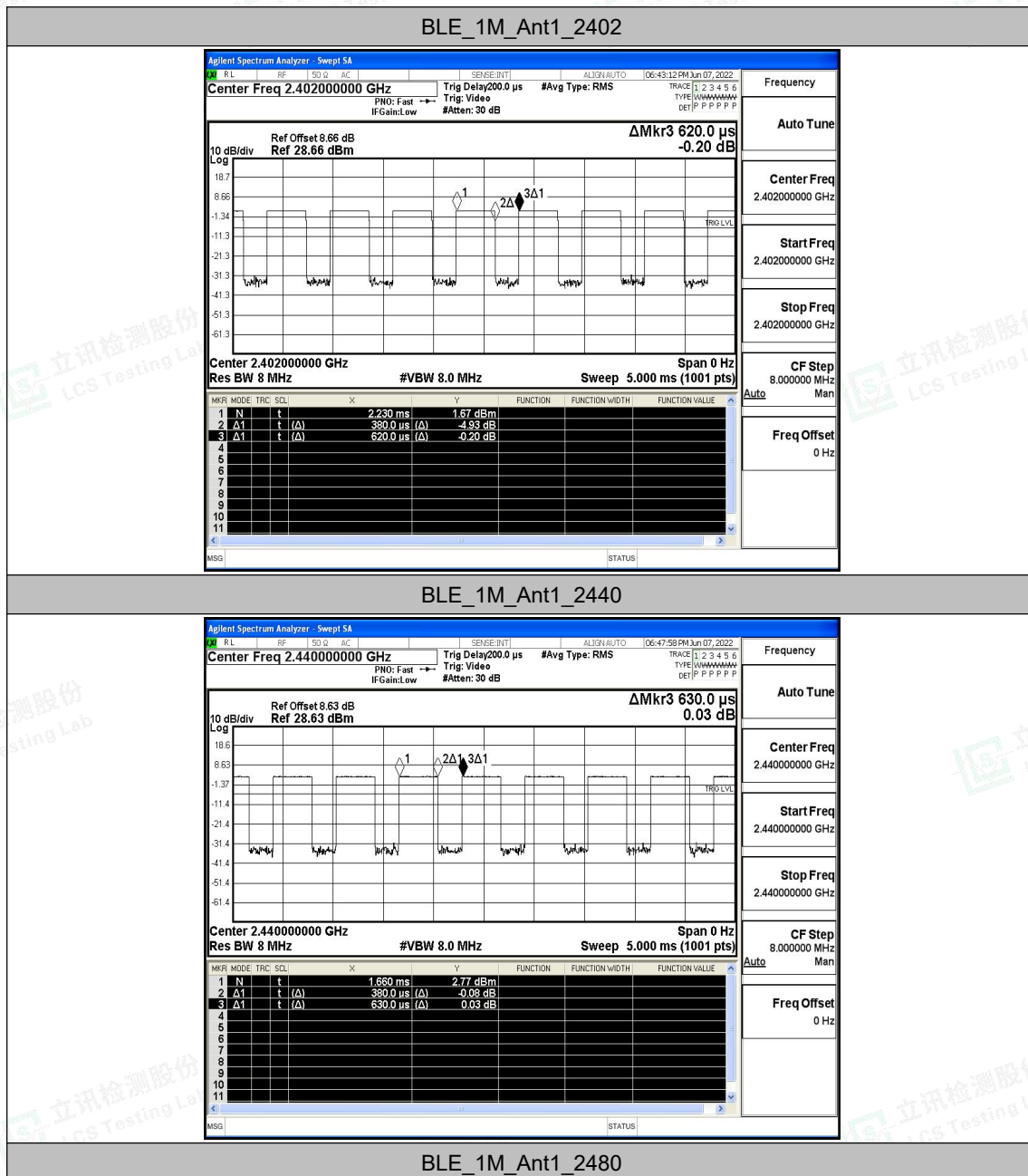
Test Result

TestMode	Antenna	Channel	ON Time [ms]	Period [ms]	X	DC [%]	xFactor	1/T	Limit	Verdict
BLE_1M	Ant1	2402	0.38	0.62	0.6129	61.29	2.13	2.63	---	---
		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	---	---





Test Graphs

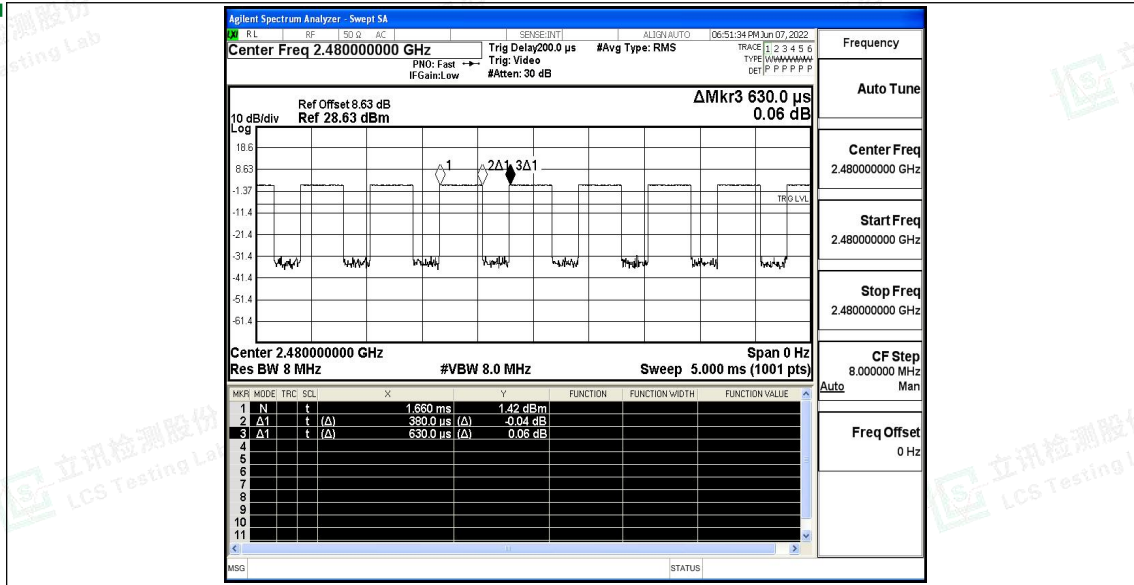


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B.8 Emissions in Restricted Bands

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	≤-41.20	38.20	≤54	PASS
				AV	2378.645	-56.16	≤-41.20	39.04	≤54	PASS
				AV	2390.000	-56.63	≤-41.20	38.57	≤54	PASS
				Peak	2310.000	-48.8	≤-21.20	46.40	≤74	PASS
				Peak	2360.270	-46.3	≤-21.20	48.90	≤74	PASS
				Peak	2390.000	-48.02	≤-21.20	47.18	≤74	PASS
		High	2480	AV	2483.500	-52.5	≤-41.20	42.70	≤54	PASS
				AV	2483.520	-52.5	≤-41.20	42.70	≤54	PASS
				AV	2500.000	-55.99	≤-41.20	39.21	≤54	PASS
				Peak	2483.500	-46.36	≤-21.20	48.84	≤74	PASS
				Peak	2483.600	-45.62	≤-21.20	49.58	≤74	PASS
				Peak	2500.000	-47.47	≤-21.20	47.73	≤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.





Test Graphs

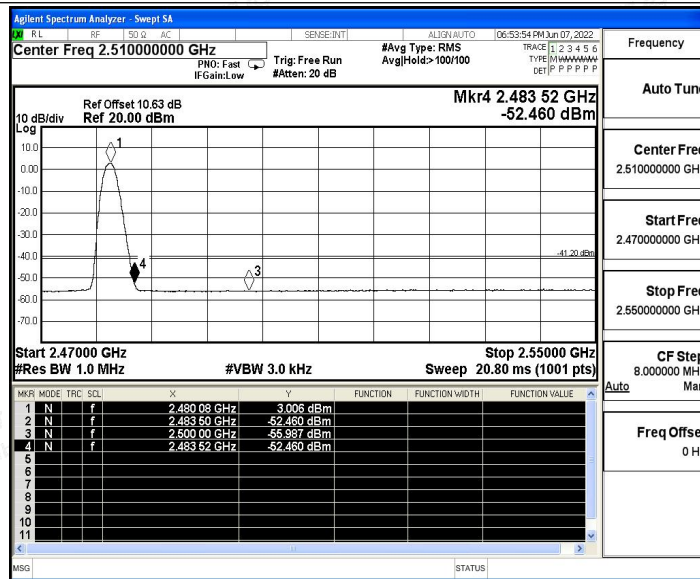


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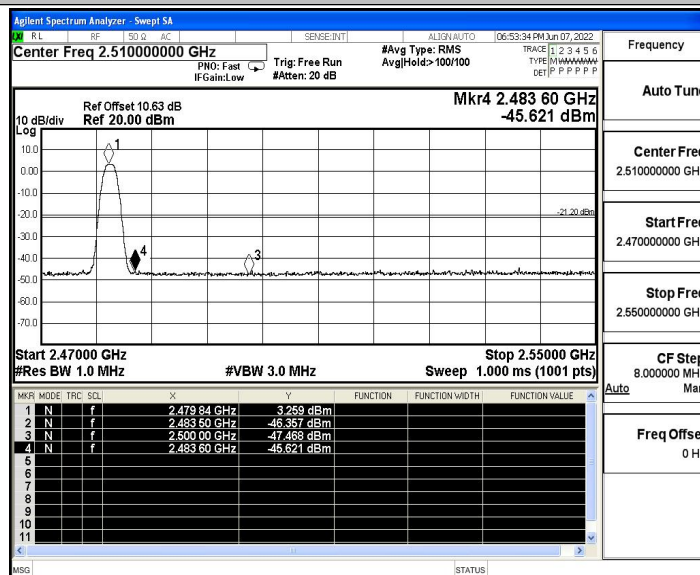
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BLE_1M_Ant1_High_2480_Peak



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