



Appendix A

RF Test Data for BT LE (Conducted Measurement)

Product Name: LED strip

Test Model: CS213

Environmental Conditions

Temperature:	23.5℃
Relative Humidity:	52.2%
ATM Pressure:	100.0 kPa
Test Engineer:	Y.M. Zhu
Supervised by:	Libu



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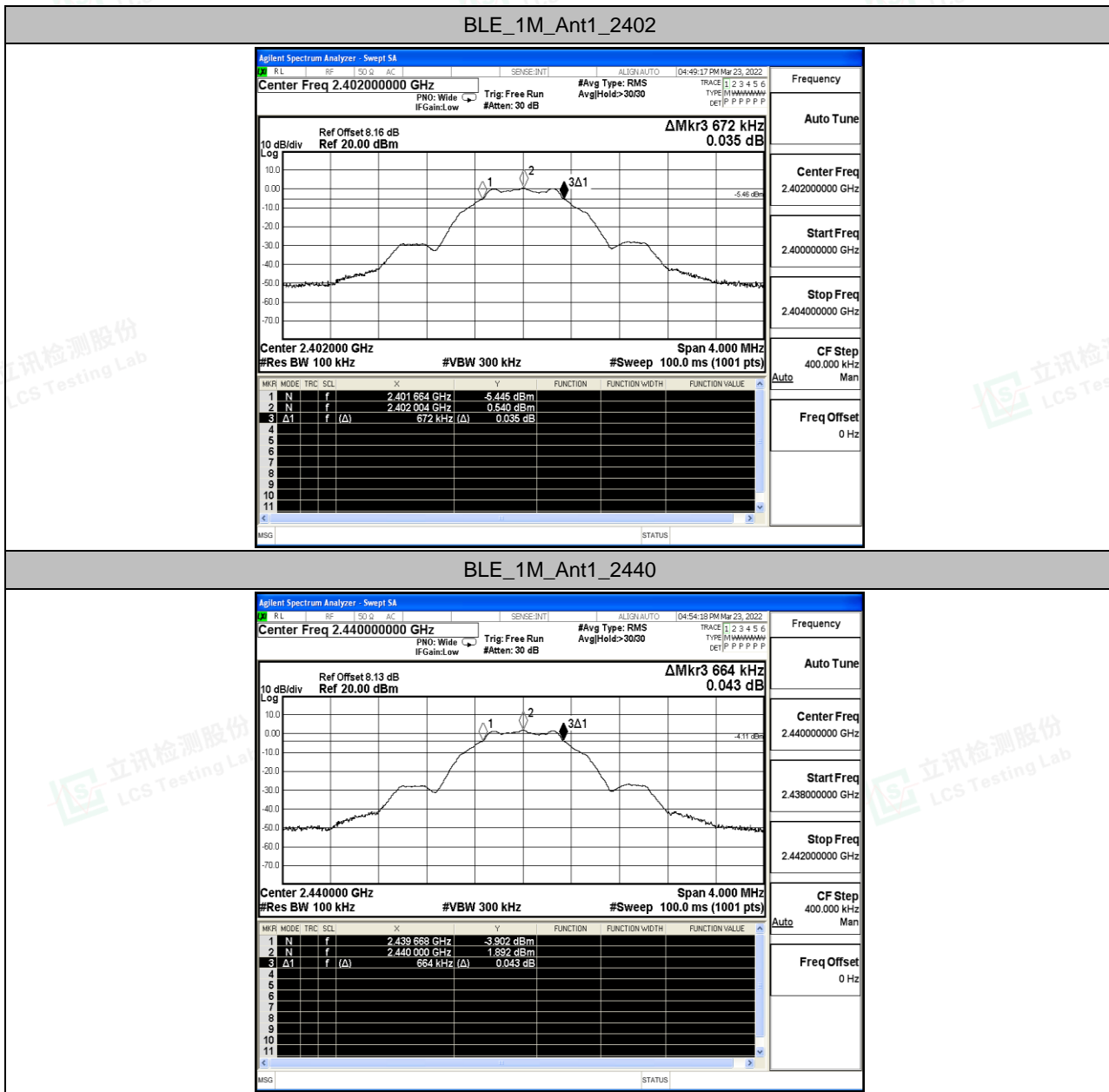


A.1 DTS Bandwidth

Test Result

TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.672	2401.664	2402.336	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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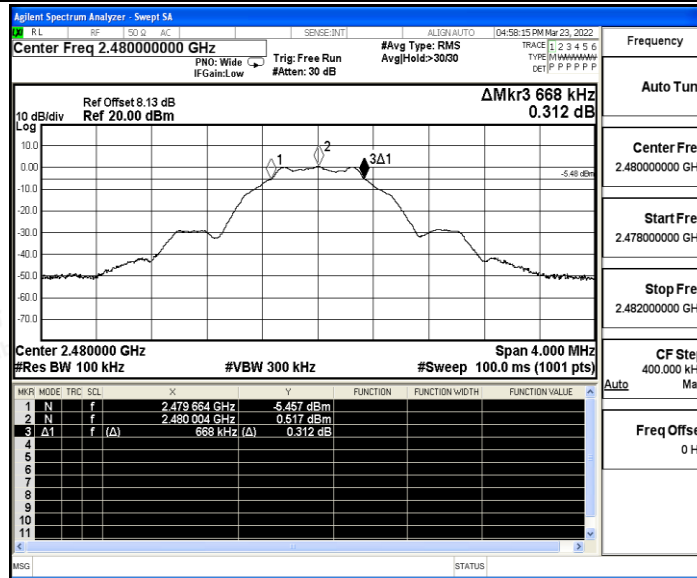
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BLE_1M_Ant1_2480



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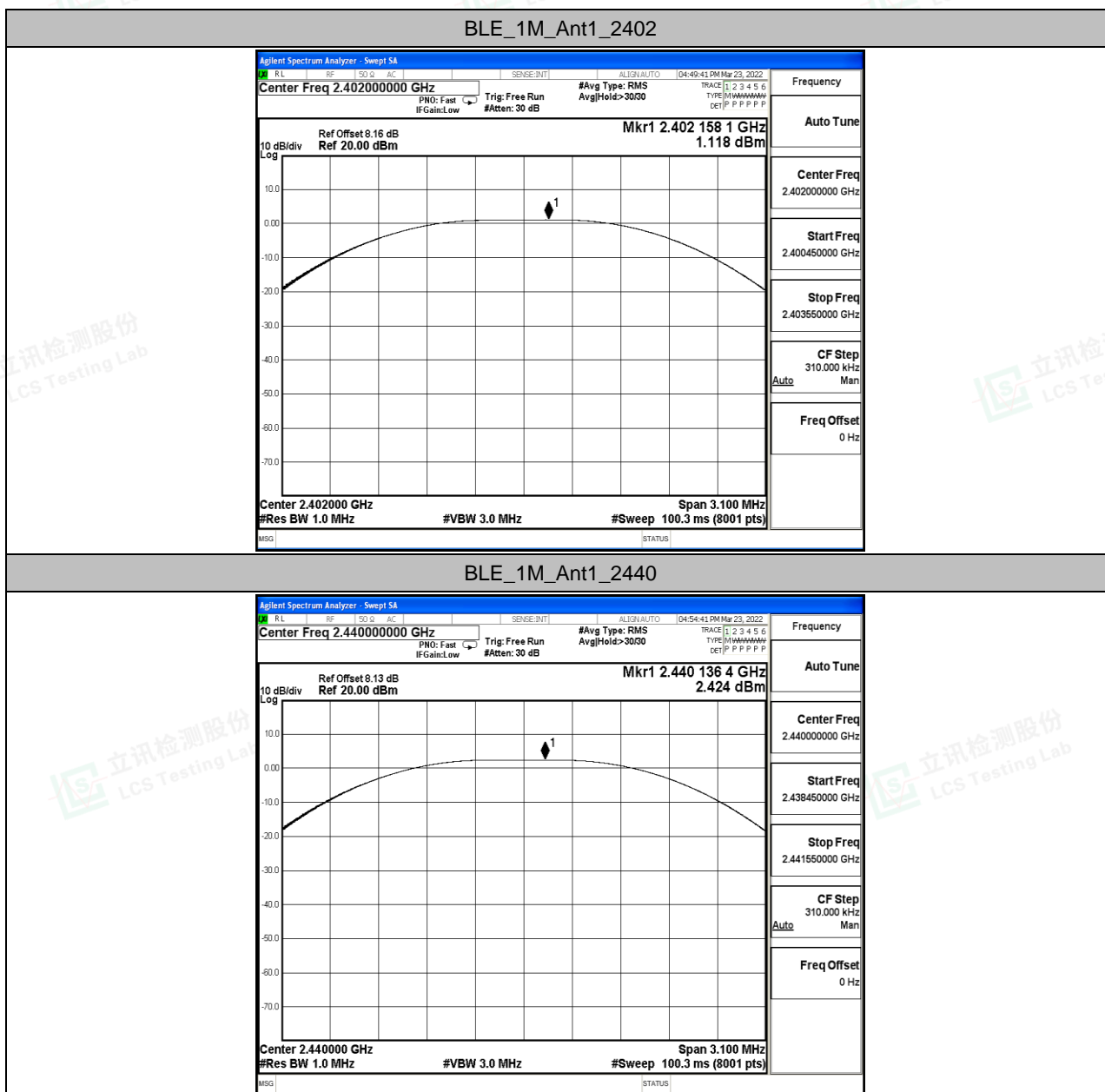


A.2 Maximum conducted output power

Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	1.12	≤30	PASS
		2440	2.42	≤30	PASS
		2480	1.06	≤30	PASS

Test Graphs



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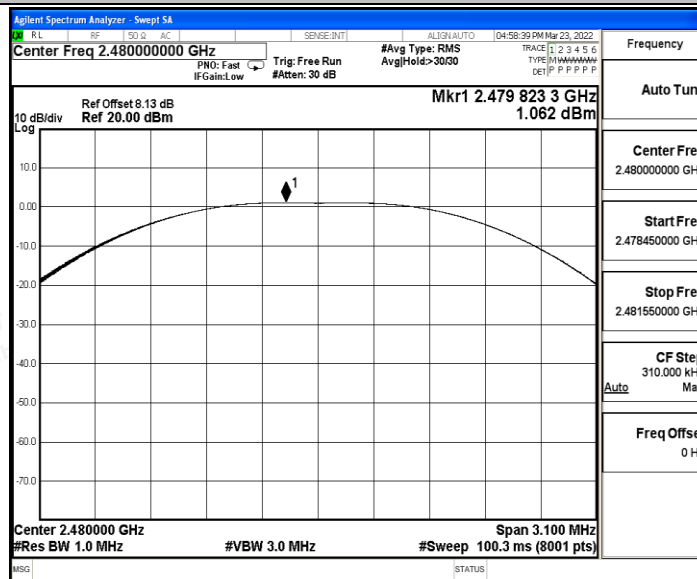
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BLE_1M_Ant1_2480



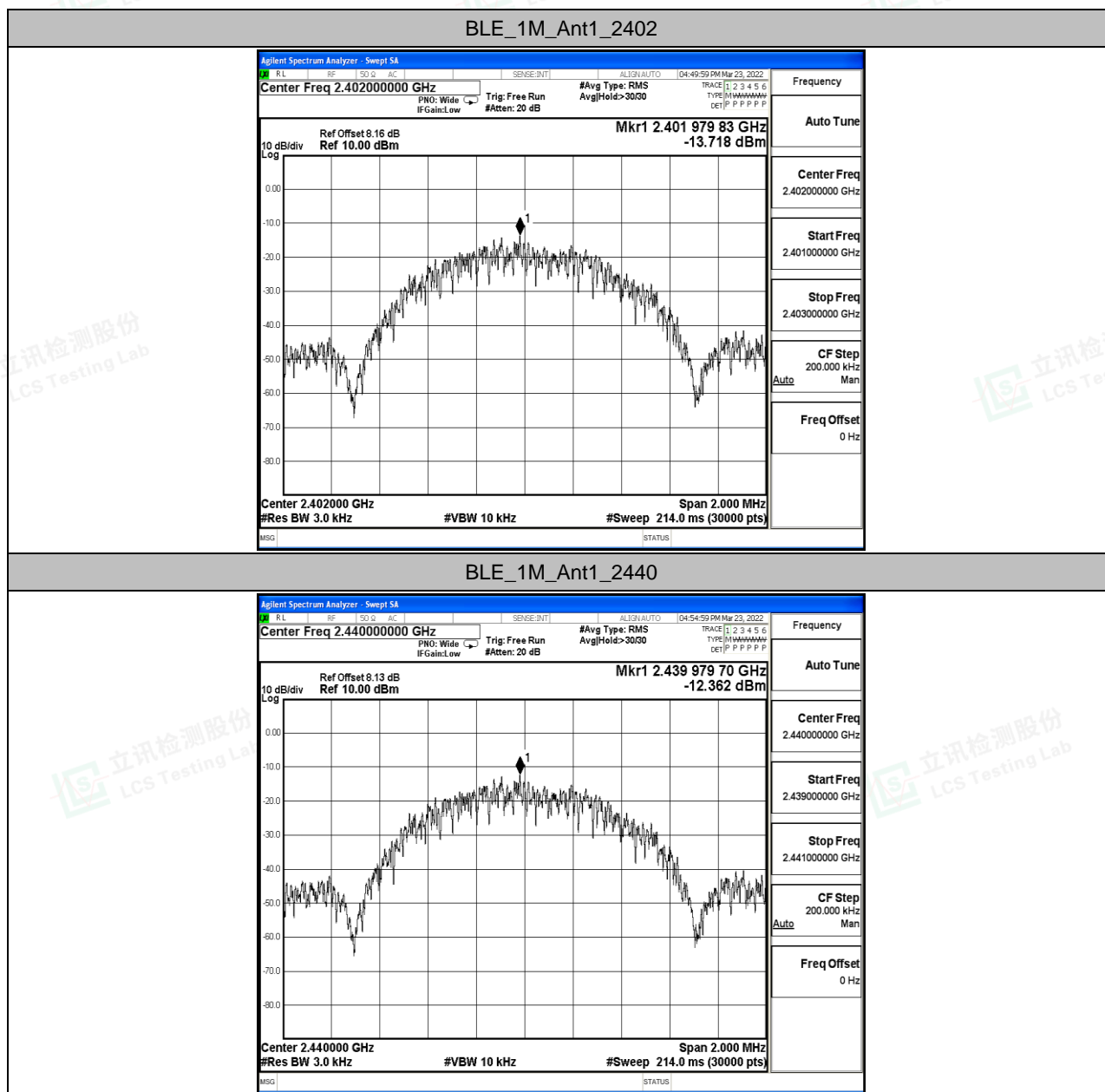


A.3 Maximum power spectral density

Test Result

TestMode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-13.72	≤8.00	PASS
		2440	-12.36	≤8.00	PASS
		2480	-13.78	≤8.00	PASS

Test Graphs



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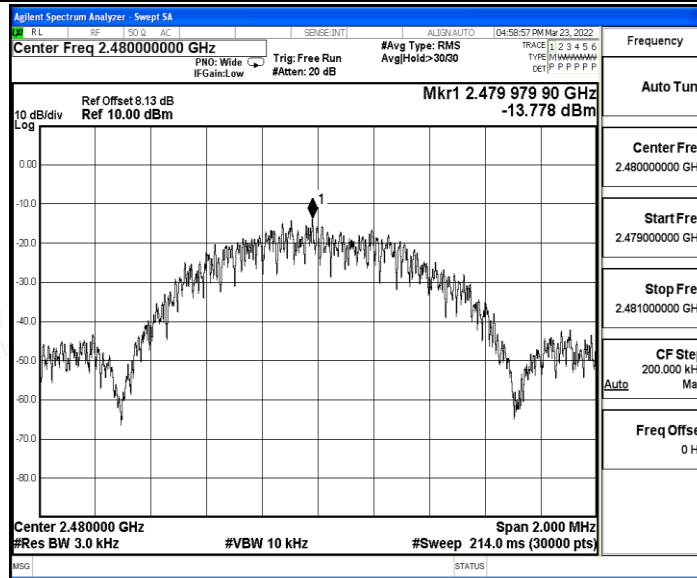
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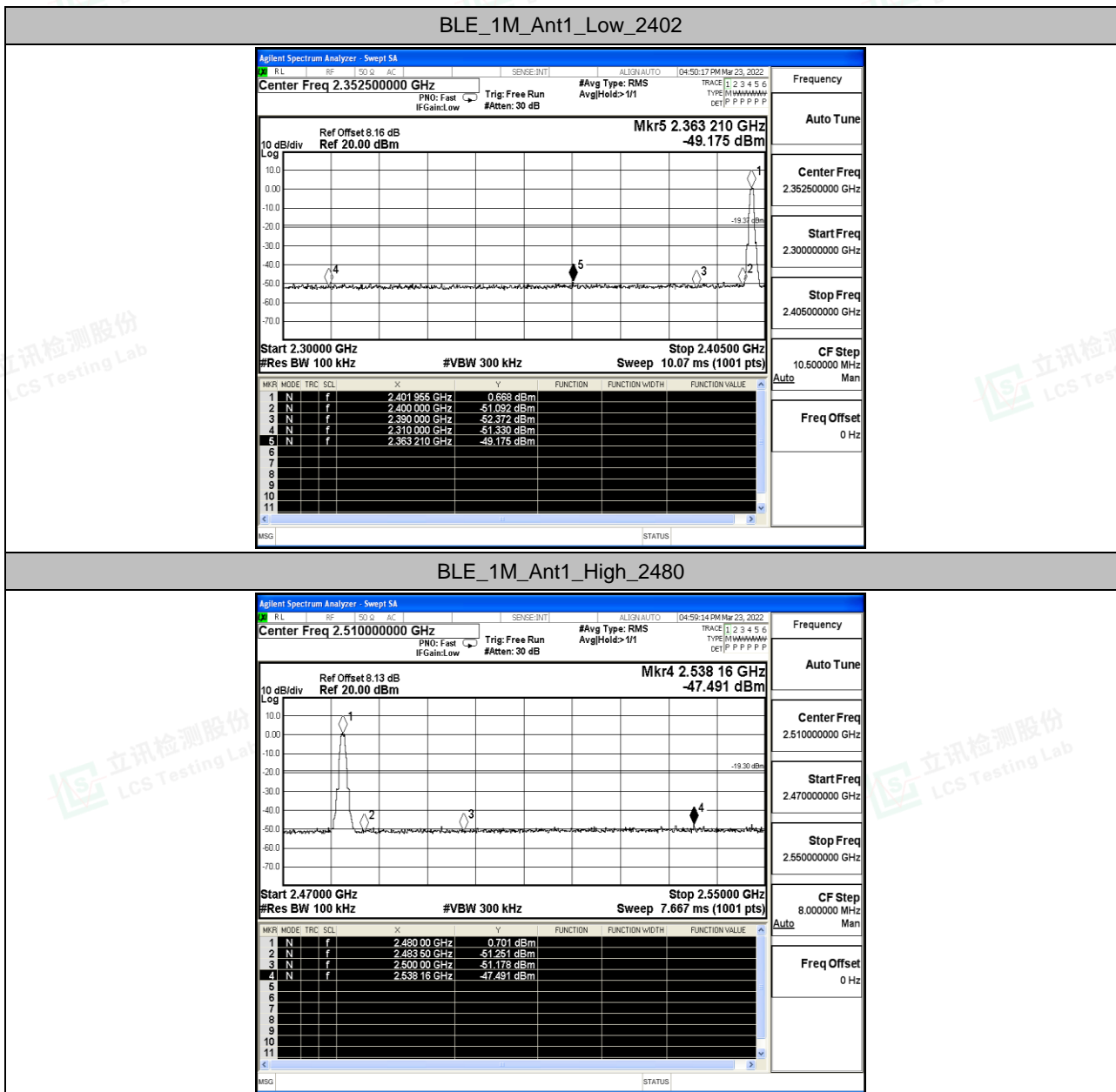


A.4 Band edge measurements

Test Result

TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	0.63	-49.18	≤-19.37	PASS
		High	2480	0.70	-47.49	≤-19.3	PASS

Test Graphs



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A.5 Conducted Spurious Emission

Test Result

TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	0.57	0.57	---	PASS
			30~1000	0.57	-61.38	≤-19.43	PASS
			1000~26500	0.57	-46.28	≤-19.43	PASS
		2440	Reference	1.90	1.90	---	PASS
			30~1000	1.90	-60.91	≤-18.1	PASS
			1000~26500	1.90	-46.14	≤-18.1	PASS
		2480	Reference	0.51	0.51	---	PASS
			30~1000	0.51	-60.99	≤-19.49	PASS
			1000~26500	0.51	-46.41	≤-19.49	PASS



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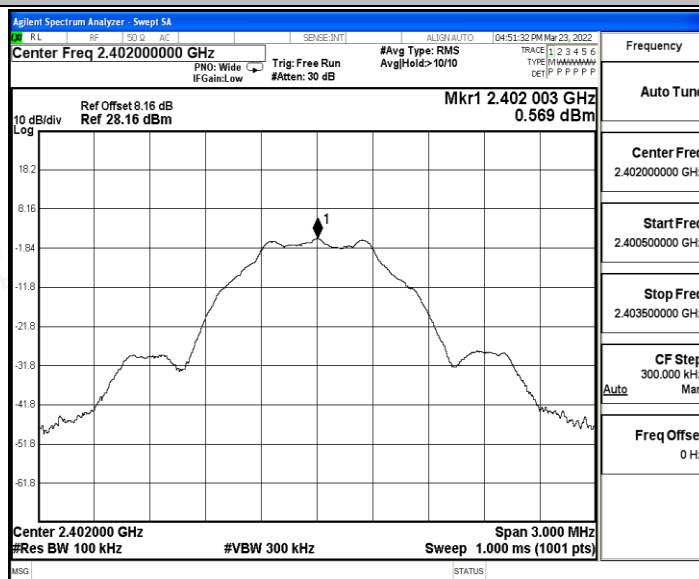
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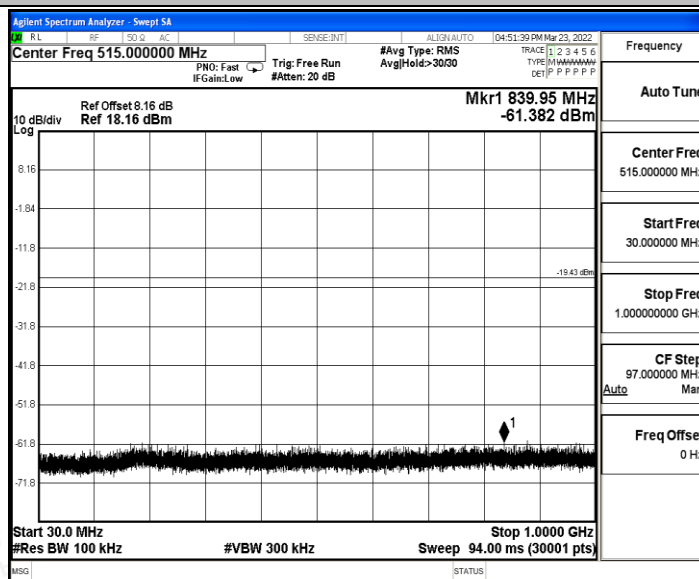


Test Graphs

BLE_1M_Ant1_2402_0~Reference



BLE_1M_Ant1_2402_30~1000



BLE_1M_Ant1_2402_1000~26500

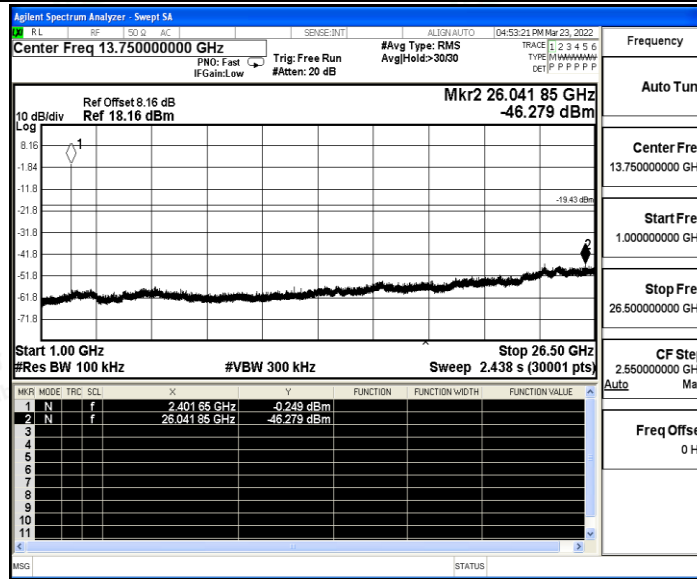


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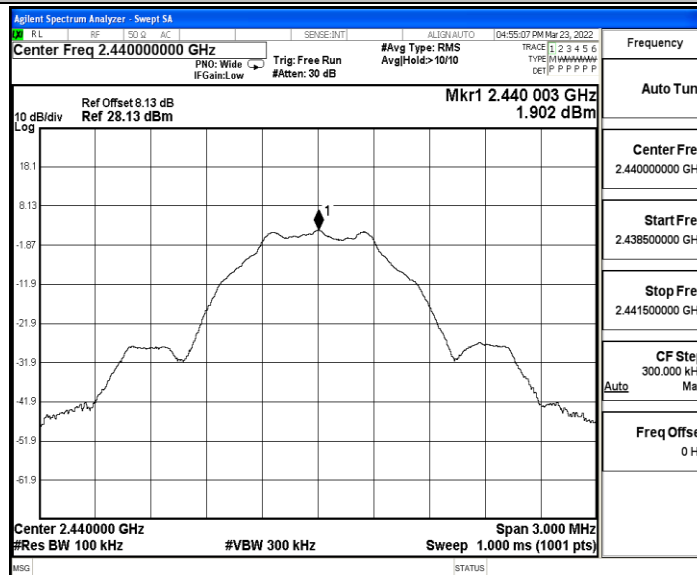
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BLE_1M_Ant1_2440_0~Reference



BLE_1M_Ant1_2440_30~1000

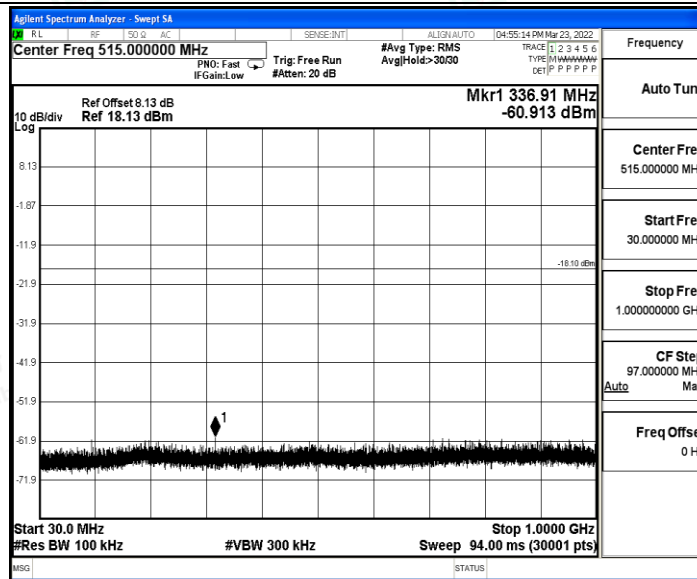


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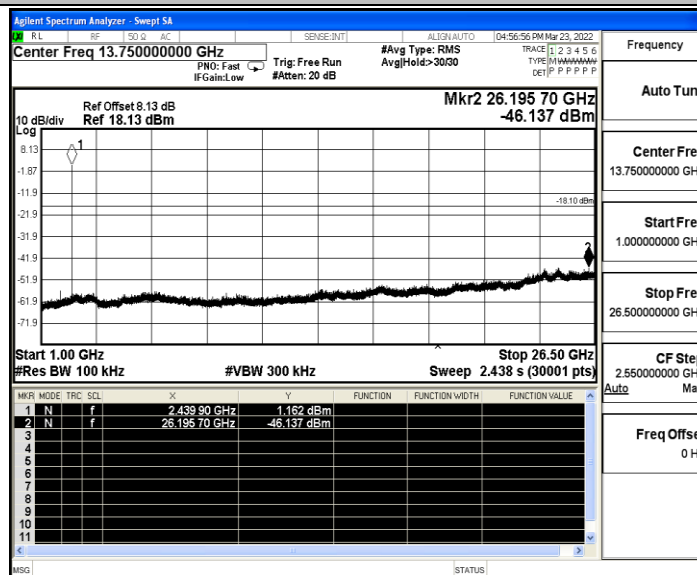
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BLE_1M_Ant1_2440_1000~26500



BLE_1M_Ant1_2480_0~Reference

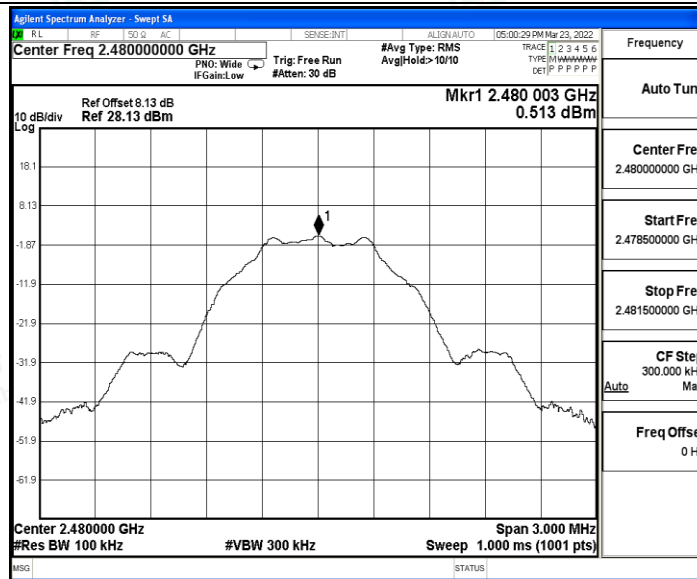


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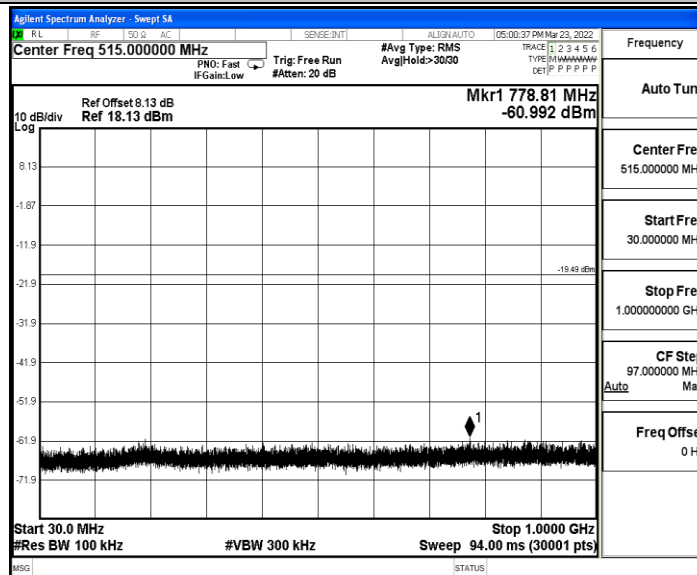
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BLE_1M_Ant1_2480_30~1000



BLE_1M_Ant1_2480_1000~26500

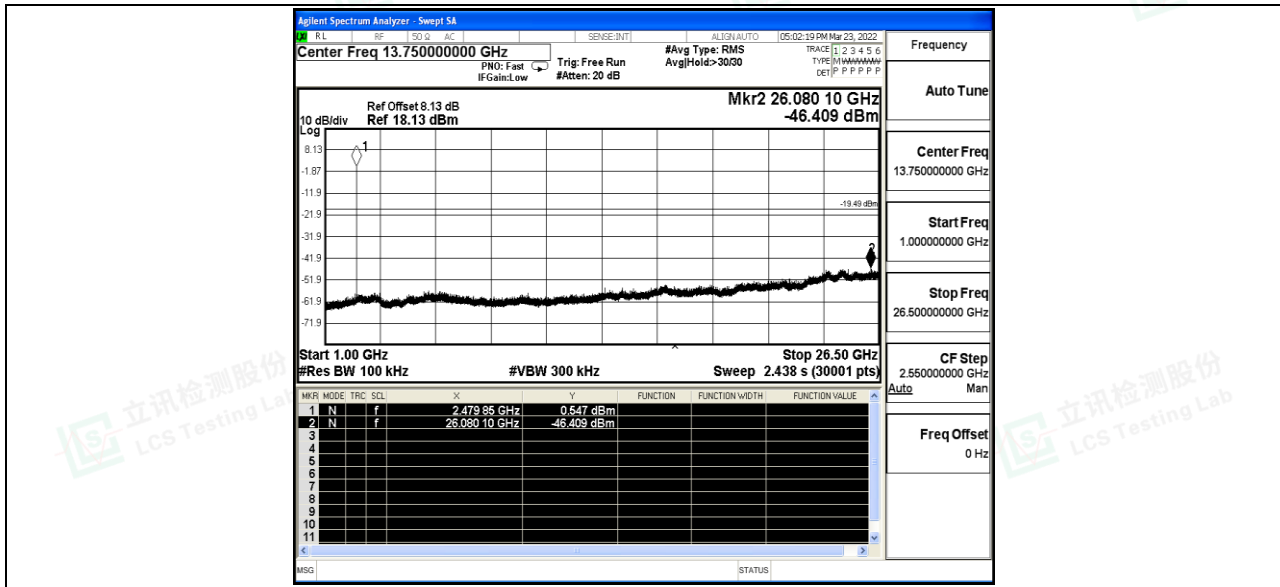


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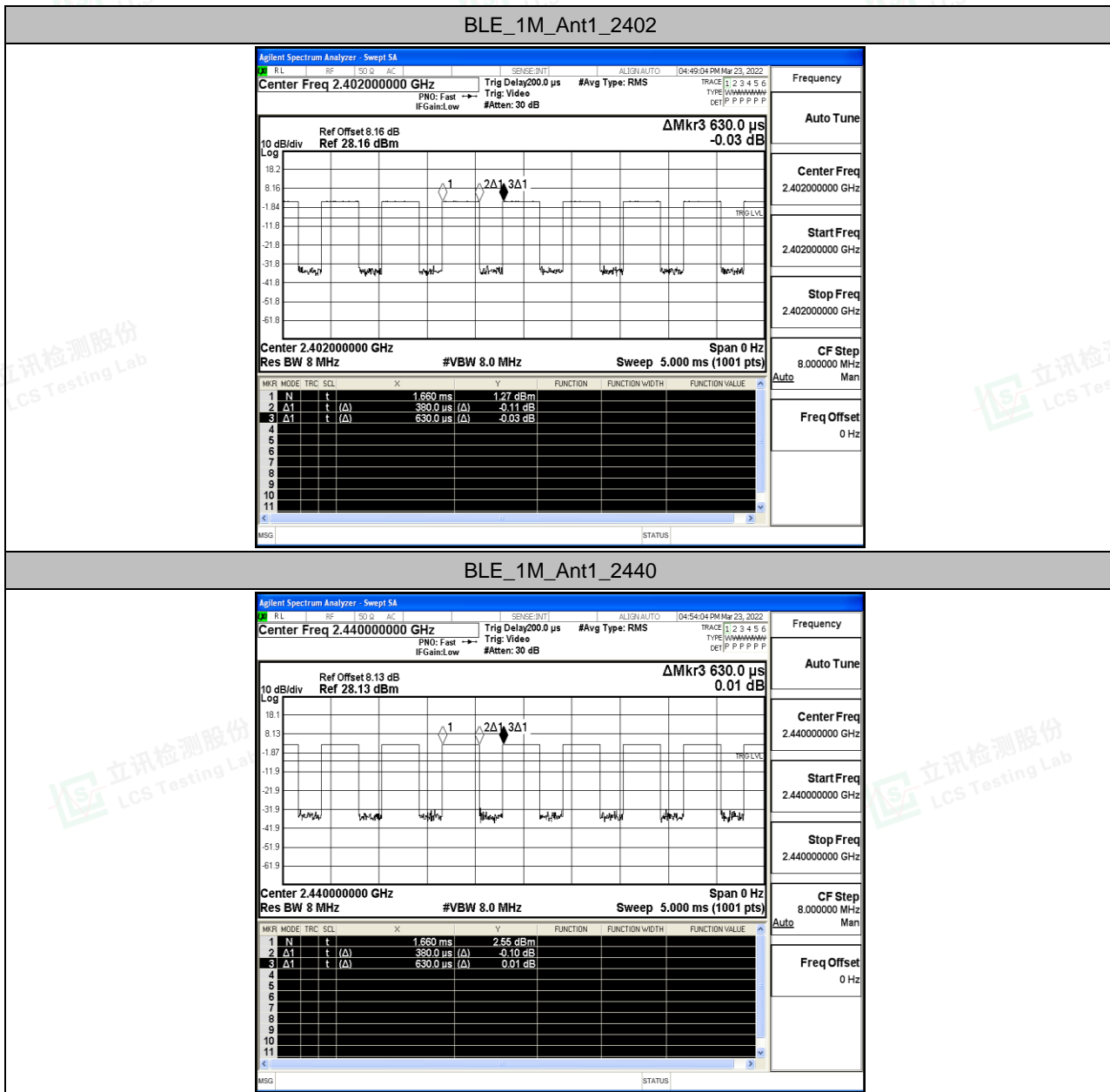


A.6 Duty Cycle

Test Result

TestMode	Antenna	Channel	ON Time [ms]	Period [ms]	X	DC [%]	1/T (kHz)	Limit	Verdict
BLE_1M	Ant1	2402	0.38	0.63	0.6032	60.32	2.63	---	---
		2440	0.38	0.63	0.6032	60.32	2.63	---	---
		2480	0.38	0.63	0.6032	60.32	2.63	---	---

Test Graphs



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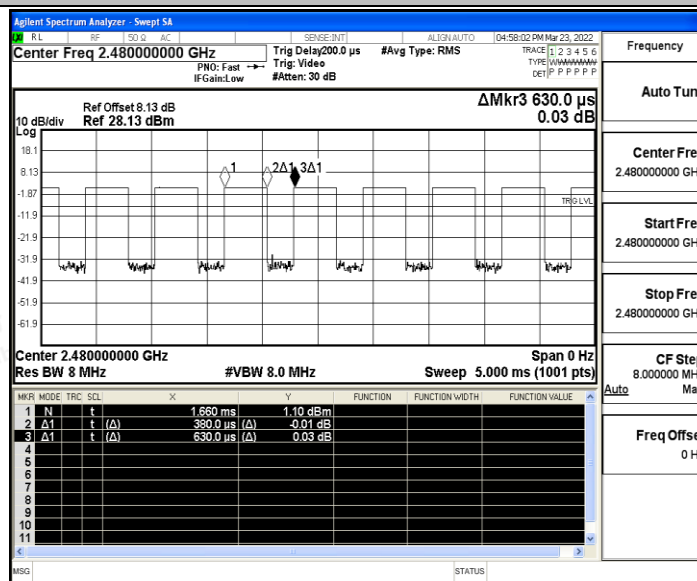
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BLE_1M_Ant1_2480



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A.7 Emissions in Restricted Bands

Test Result

TestM ode	Anten na	ChName	Channel	Detector	Freq. [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
BLE_ 1M	Ant1	Low	2402	AV	2310.000	-48.07	≤-41.20	47.13	≤54	PASS
				AV	2383.790	-47.14	≤-41.20	48.06	≤54	PASS
				AV	2390.000	-47.72	≤-41.20	47.48	≤54	PASS
				Peak	2310.000	-39.94	≤-21.20	55.26	≤74	PASS
				Peak	2383.370	-36.99	≤-21.20	58.21	≤74	PASS
				Peak	2390.000	-38.59	≤-21.20	56.61	≤74	PASS
		High	2480	AV	2483.500	-46.88	≤-41.20	48.32	≤54	PASS
				AV	2497.200	-46.8	≤-41.20	48.40	≤54	PASS
				AV	2500.000	-47.11	≤-41.20	48.09	≤54	PASS
				Peak	2483.500	-38.34	≤-21.20	56.86	≤74	PASS
				Peak	2484.720	-36.9	≤-21.20	58.30	≤74	PASS
				Peak	2500.000	-37.87	≤-21.20	57.33	≤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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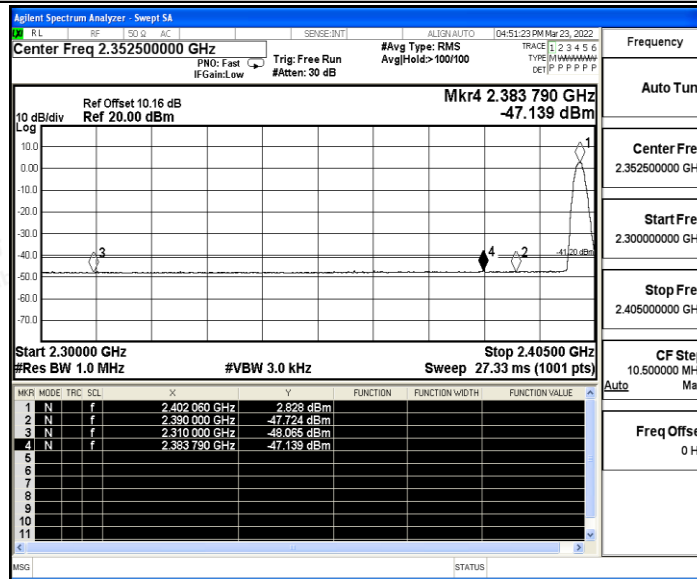
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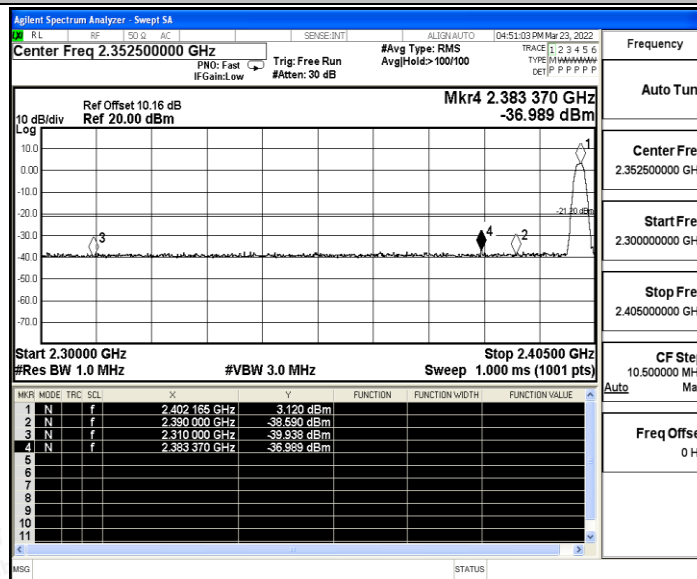


Test Graphs

BLE_1M_Ant1_Low_2402_AV



BLE_1M_Ant1_Low_2402_Peak



BLE_1M_Ant1_High_2480_AV

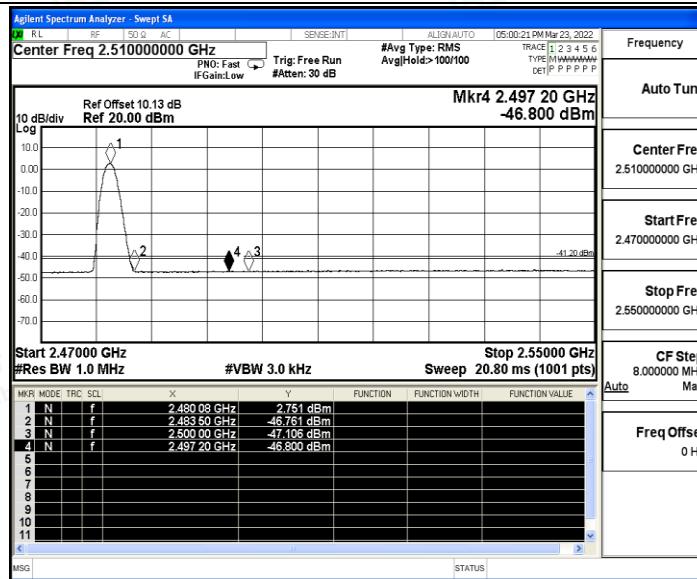


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BLE_1M_Ant1_High_2480_Peak

