



Appendix A

RF Test Data for BLE (Conducted Measurement)

Product Name: SOUNDPRO
Test Model: NDS-4005

Environmental Conditions

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





A.1 6dB Bandwidth

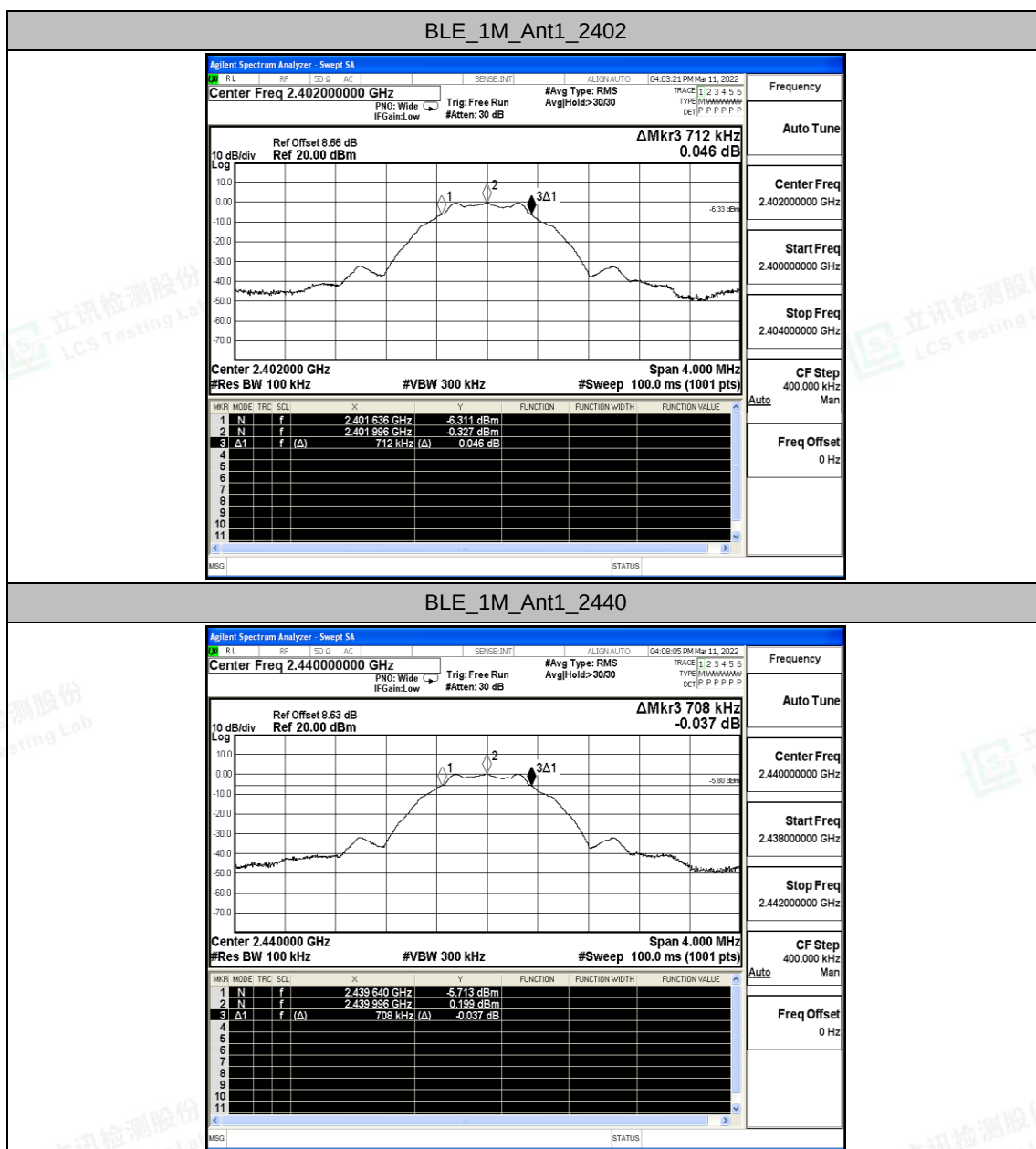
Test Result

TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.712	2401.636	2402.348	0.5	PASS
		2440	0.708	2439.640	2440.348	0.5	PASS
		2480	0.708	2479.640	2480.348	0.5	PASS





Test Graphs

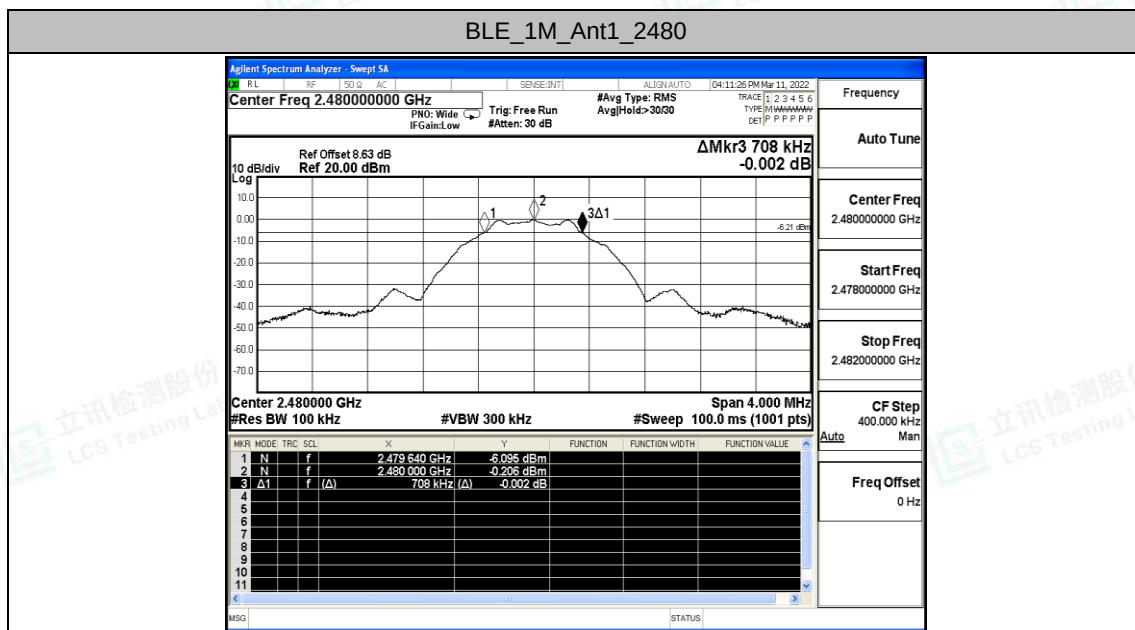


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A.2 Maximum conducted output power

Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	0.52	≤30	PASS
		2440	1.03	≤30	PASS
		2480	0.6	≤30	PASS



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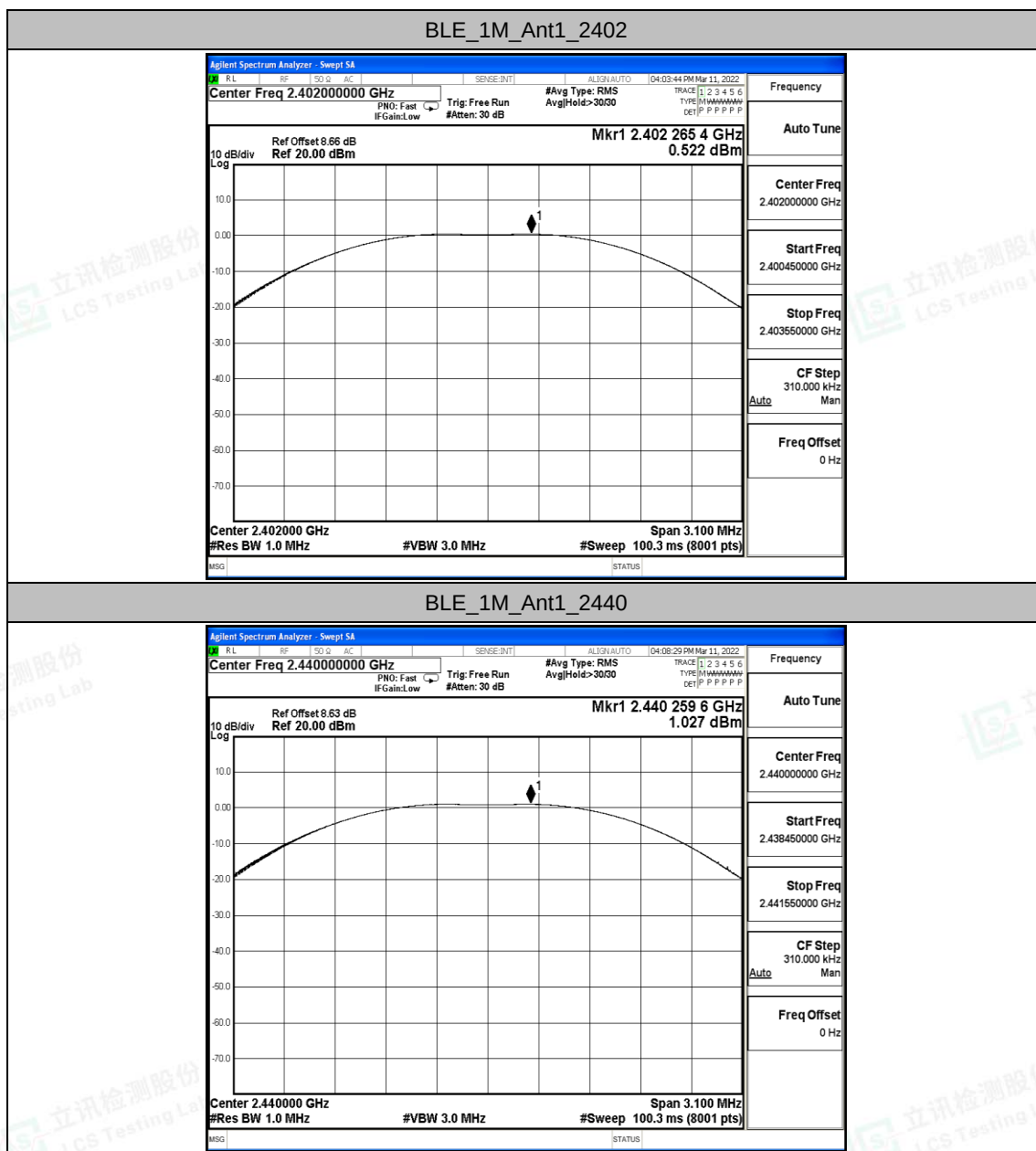
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Test Graphs

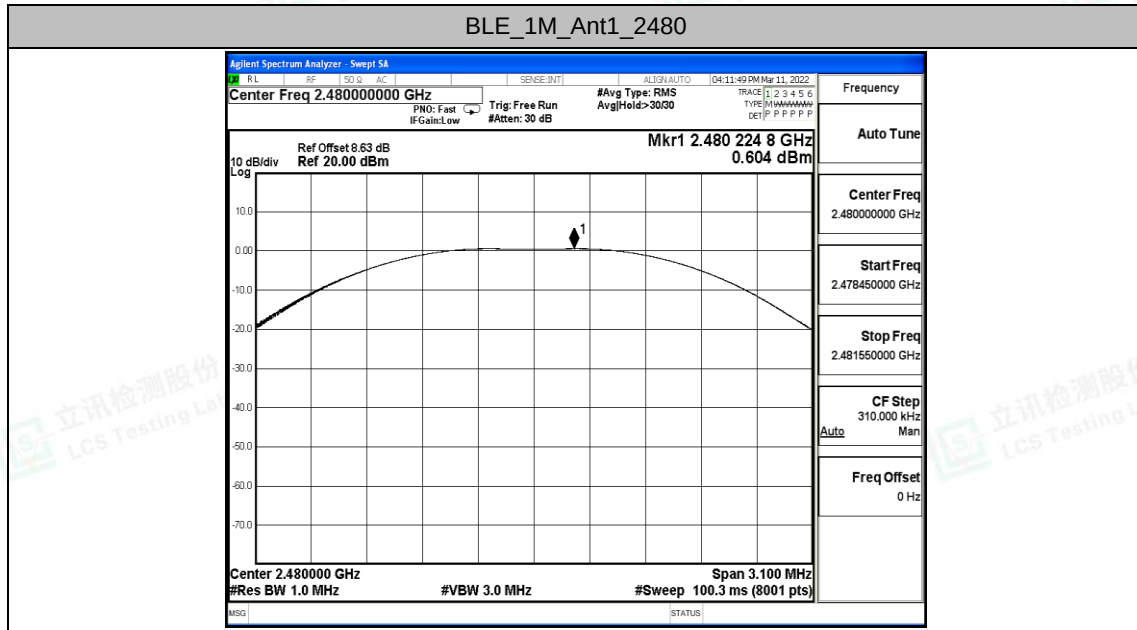


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A.3 Maximum power spectral density

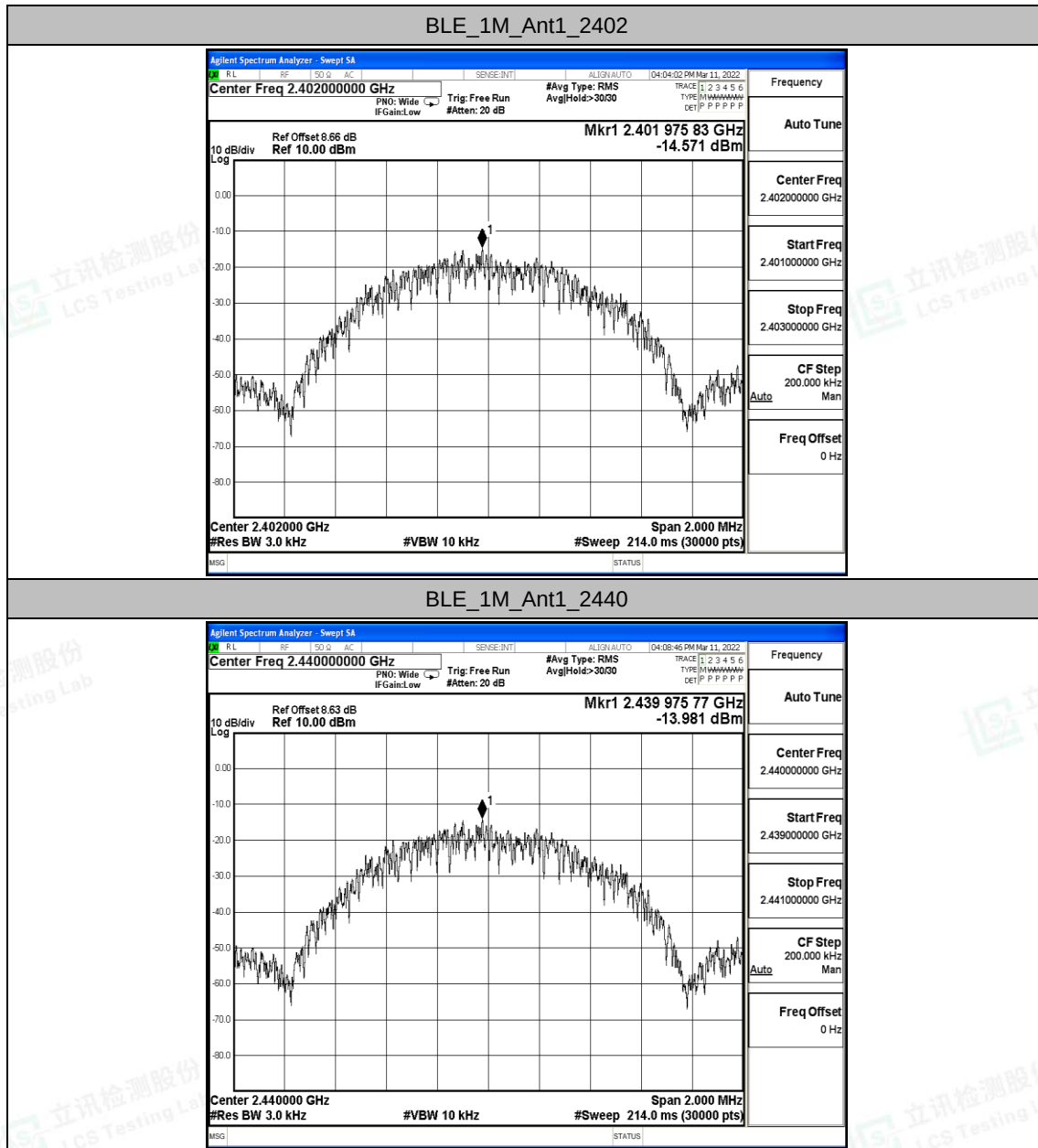
Test Result

TestMode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-14.57	≤8.00	PASS
		2440	-13.98	≤8.00	PASS
		2480	-14.46	≤8.00	PASS





Test Graphs



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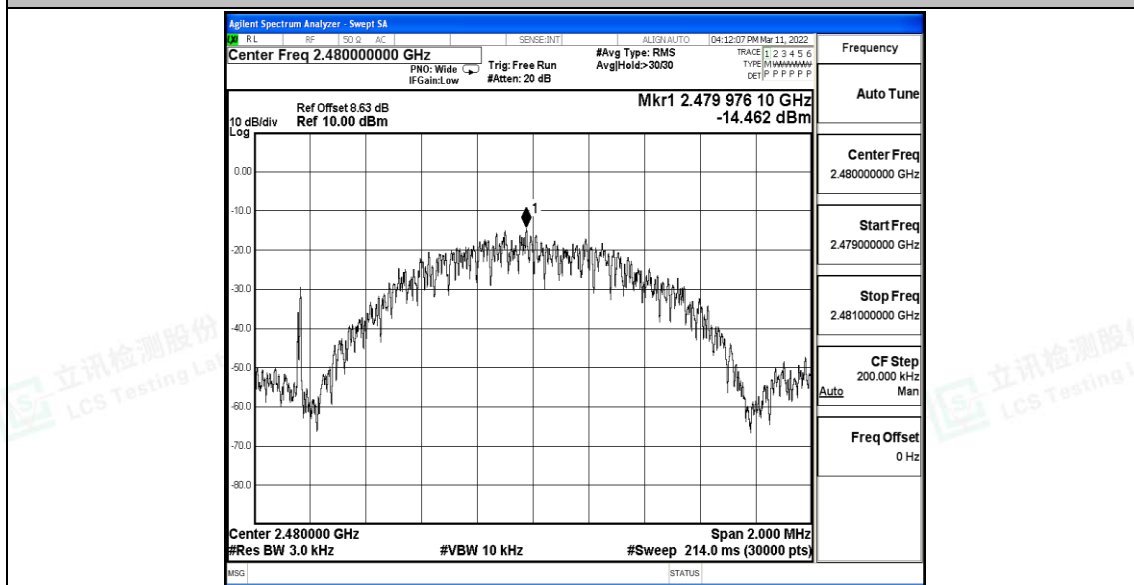
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BLE_1M_Ant1_2480



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A.4 Band edge measurements

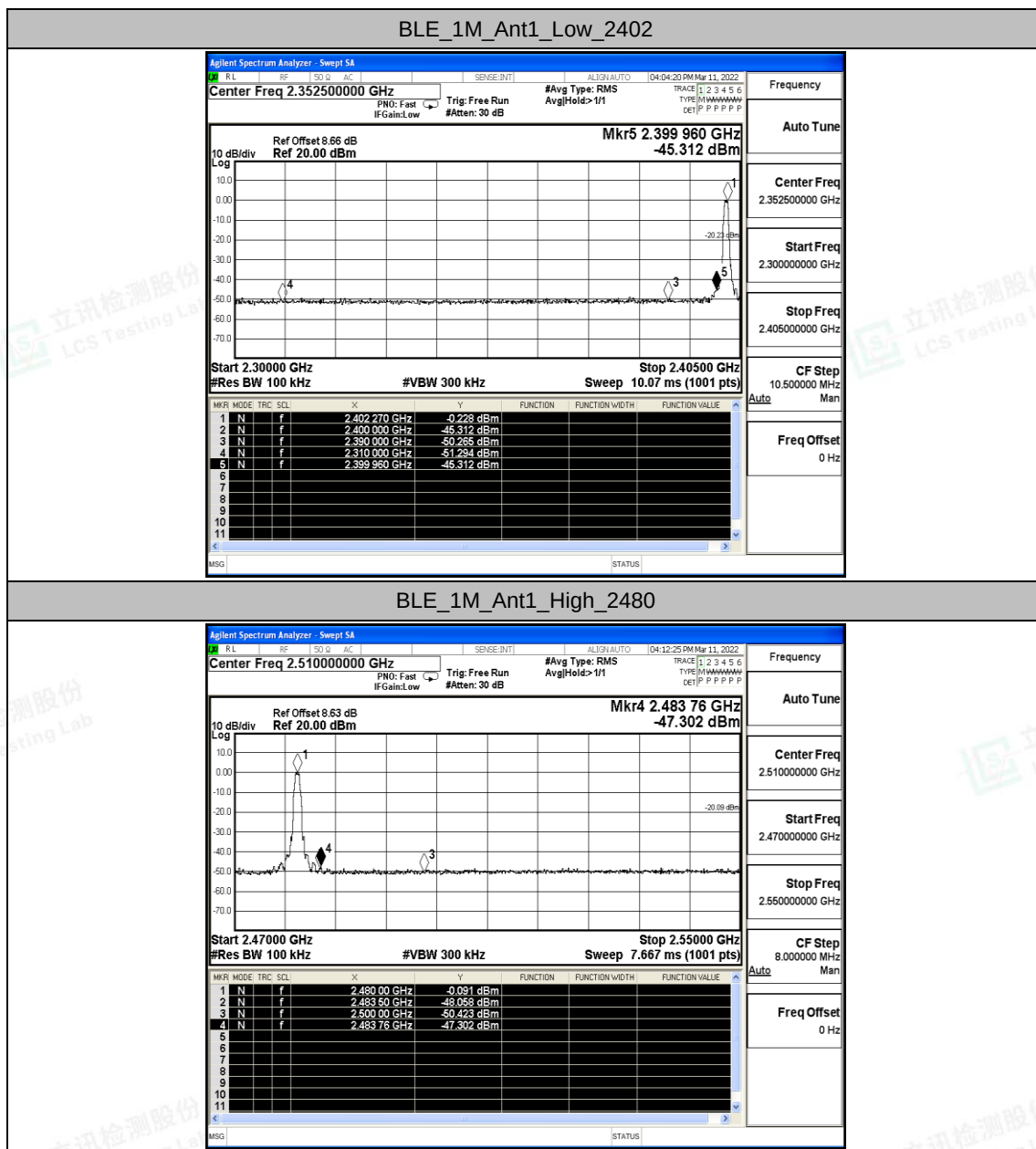
Test Result

TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	-0.23	-45.41	≤-20.23	PASS
		High	2480	-0.09	-47.3	≤-20.09	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	-0.33	-0.33	---	PASS
			30~1000	-0.33	-31.98	≤-20.33	PASS
			1000~26500	-0.33	-46.21	≤-20.33	PASS
		2440	Reference	0.21	0.21	---	PASS
			30~1000	0.21	-59.18	≤-19.79	PASS
			1000~26500	0.21	-45.97	≤-19.79	PASS
		2480	Reference	-0.21	-0.21	---	PASS
			30~1000	-0.21	-58.9	≤-20.21	PASS
			1000~26500	-0.21	-46.55	≤-20.21	PASS



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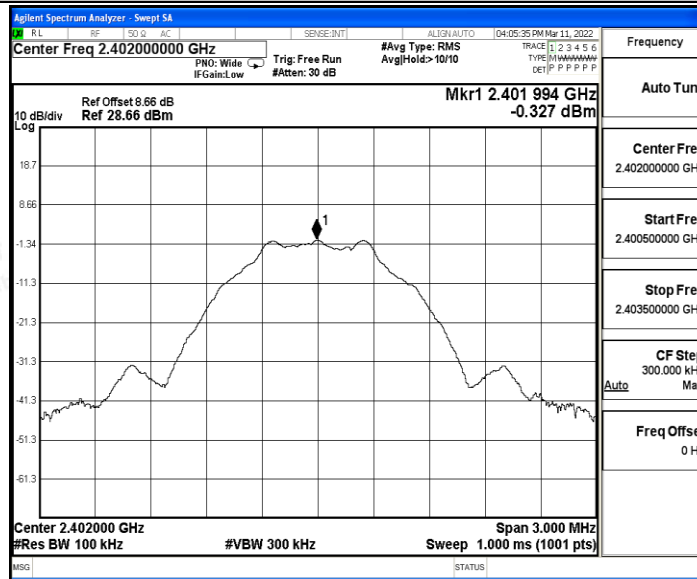
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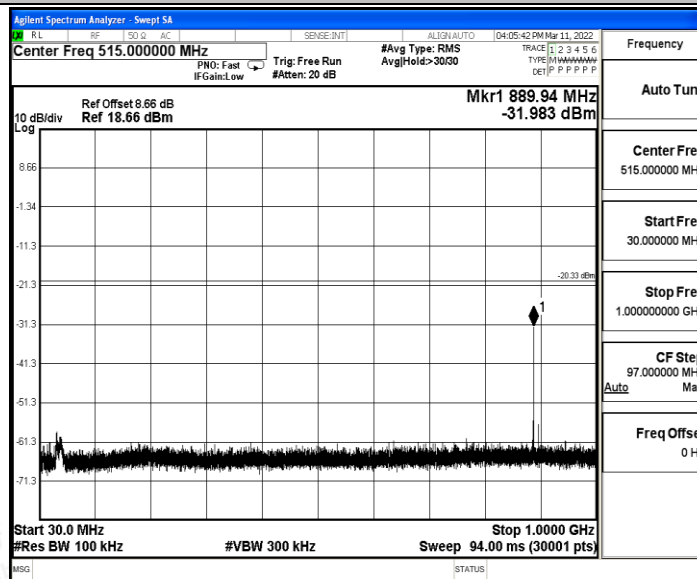


Test Graphs

BLE_1M_Ant1_2402_0~Reference



BLE_1M_Ant1_2402_30~1000



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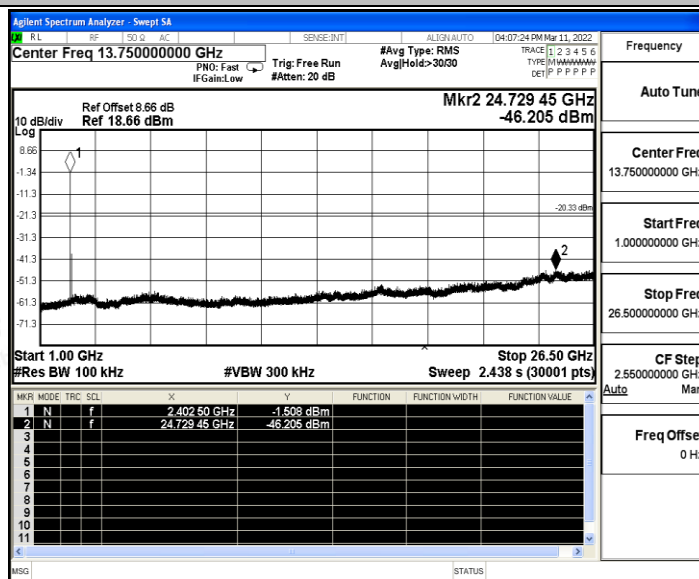
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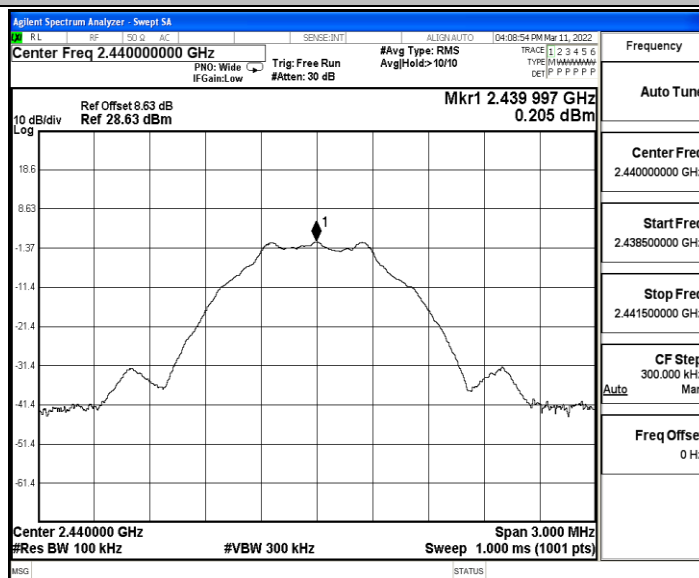
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BLE_1M_Ant1_2402_1000~26500



BLE_1M_Ant1_2440_0~Reference



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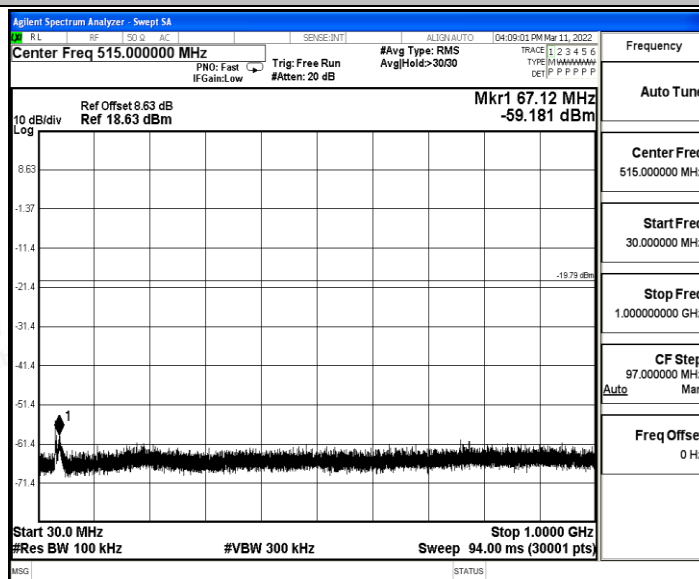
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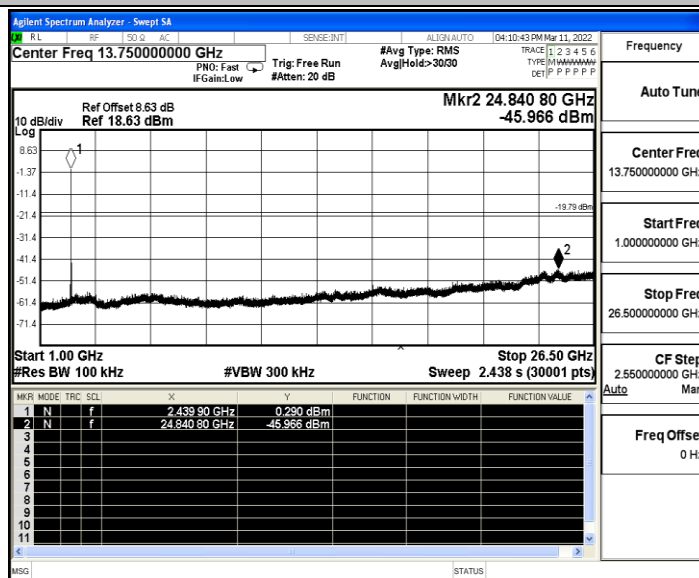
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BLE_1M_Ant1_2440_30~1000



BLE_1M_Ant1_2440_1000~26500



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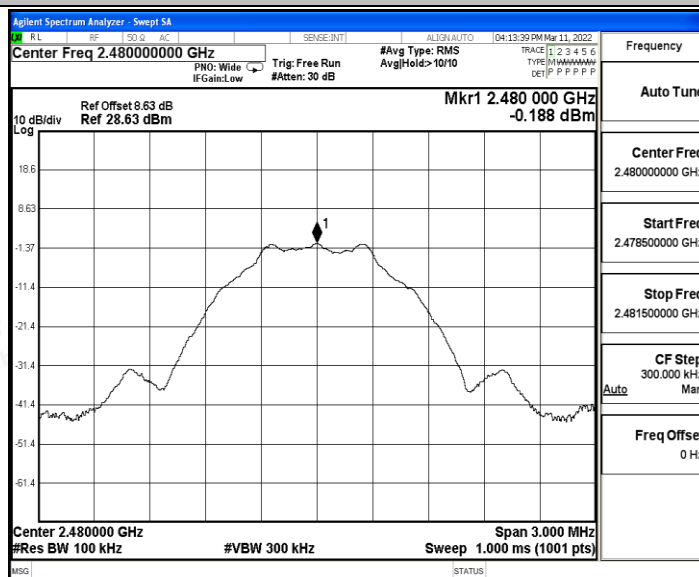
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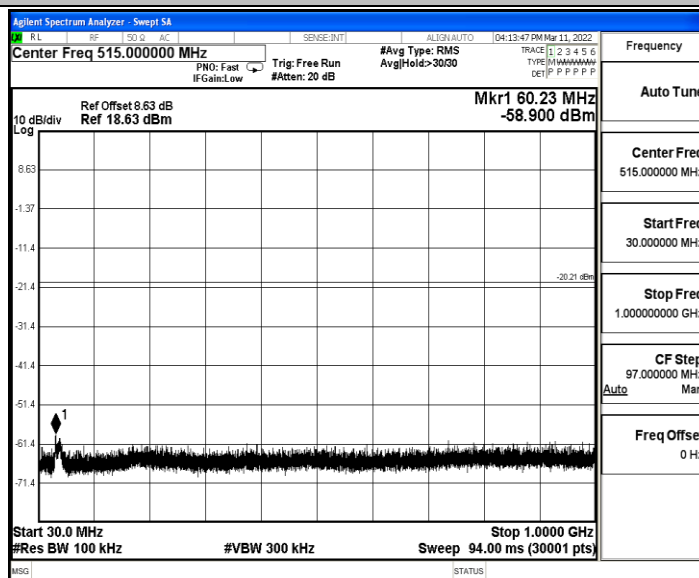
Scan code to check authenticity



BLE_1M_Ant1_2480_0~Reference



BLE_1M_Ant1_2480_30~1000



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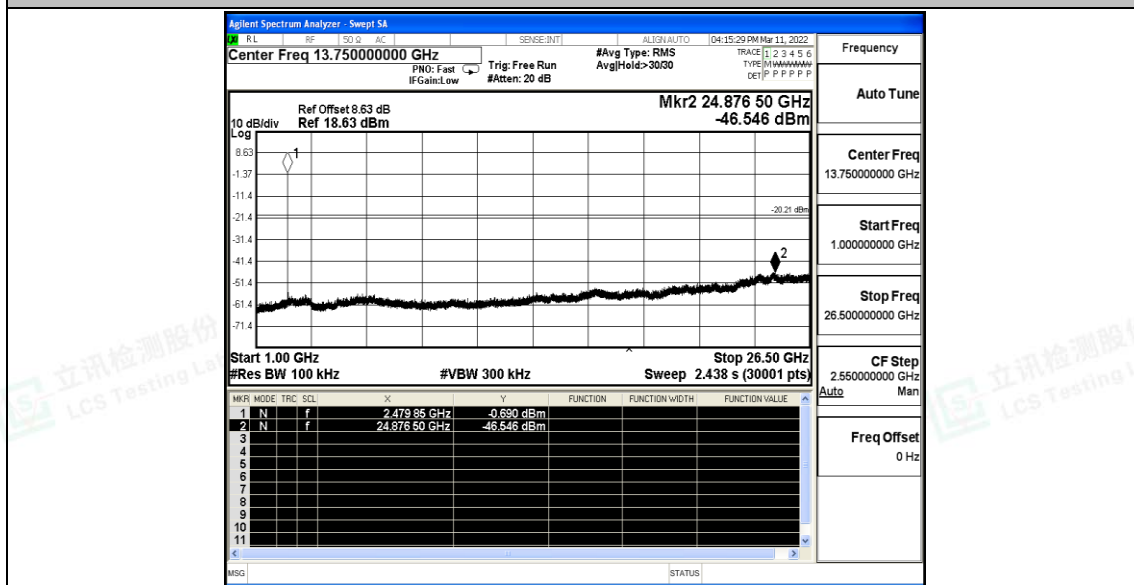
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BLE_1M_Ant1_2480_1000-26500



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A.6 Duty Cycle

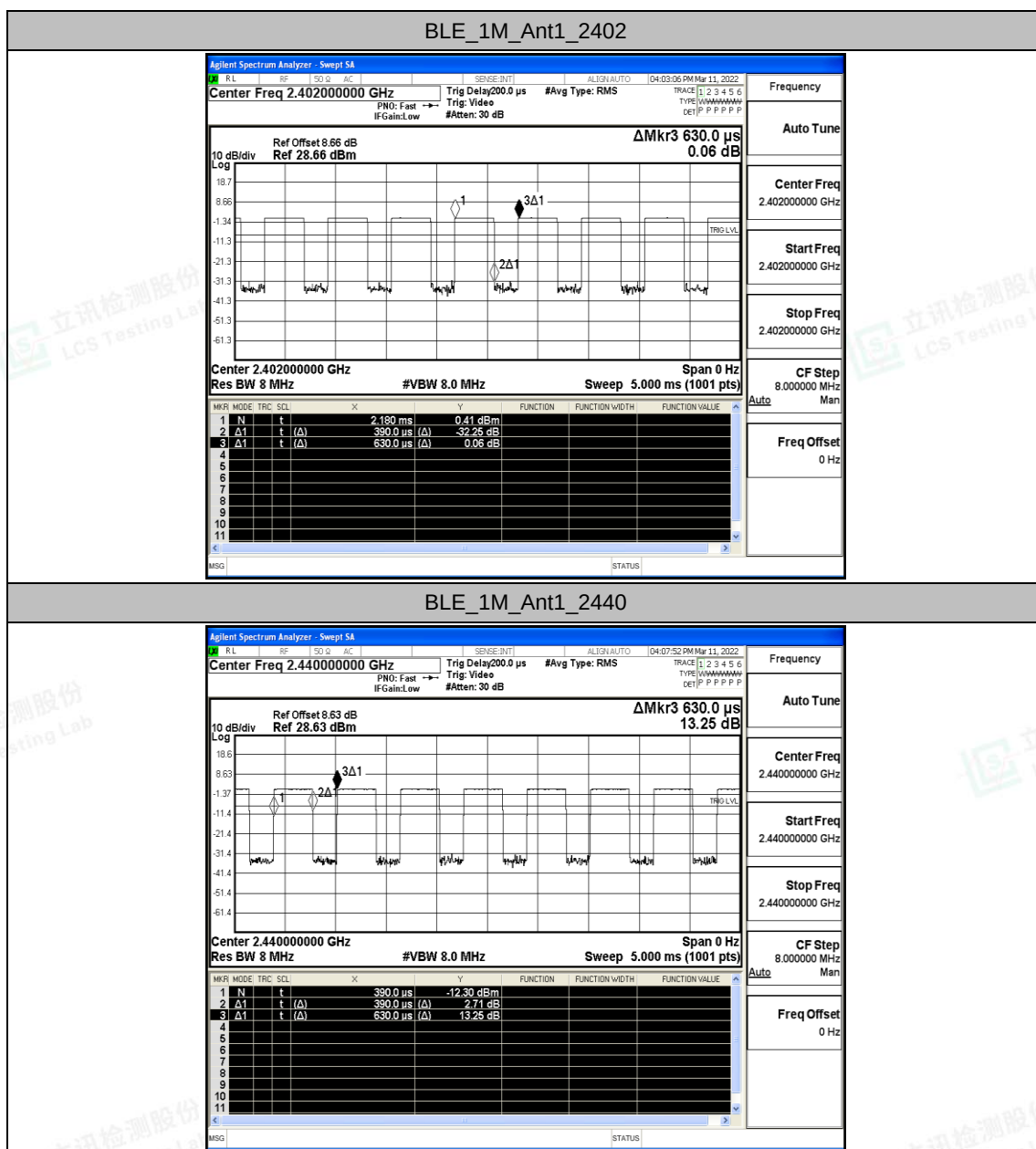
Test Result

TestMode	Antenna	Channel	ON Time [ms]	Period [ms]	X	DC [%]	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

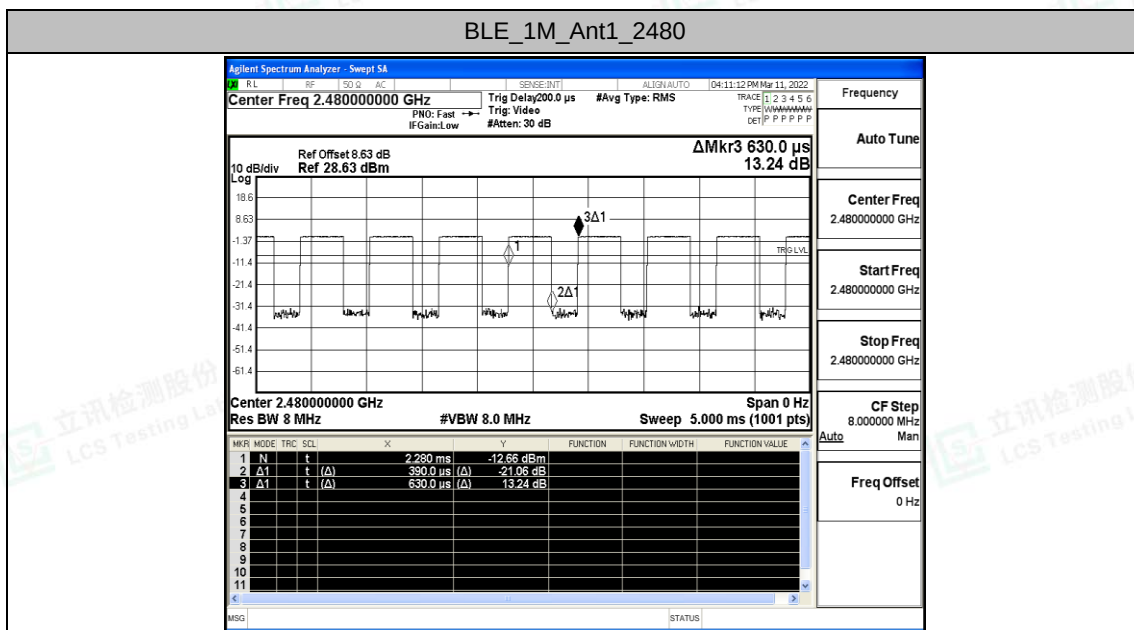


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A.7 Emissions in Restricted Bands

Test Result

TestMode	Antenna	ChName	Channel	Detector	Freq. [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
BLE_1M	Ant1	Low	2402	AV	2310.000	-47.56	≤-41.20	47.64	≤54	PASS
				AV	2388.935	-46.87	≤-41.20	48.33	≤54	PASS
				AV	2390.000	-47.19	≤-41.20	48.01	≤54	PASS
				Peak	2310.000	-39.24	≤-21.20	55.96	≤74	PASS
				Peak	2373.080	-36.6	≤-21.20	58.60	≤74	PASS
				Peak	2390.000	-38.55	≤-21.20	56.65	≤74	PASS
		High	2480	AV	2483.500	-46.08	≤-41.20	49.12	≤54	PASS
				AV	2483.760	-46.08	≤-41.20	49.12	≤54	PASS
				AV	2500.000	-46.74	≤-41.20	48.46	≤54	PASS
				Peak	2483.500	-32.42	≤-21.20	62.78	≤74	PASS
				Peak	2483.760	-32.27	≤-21.20	62.93	≤74	PASS
				Peak	2500.000	-36.97	≤-21.20	58.23	≤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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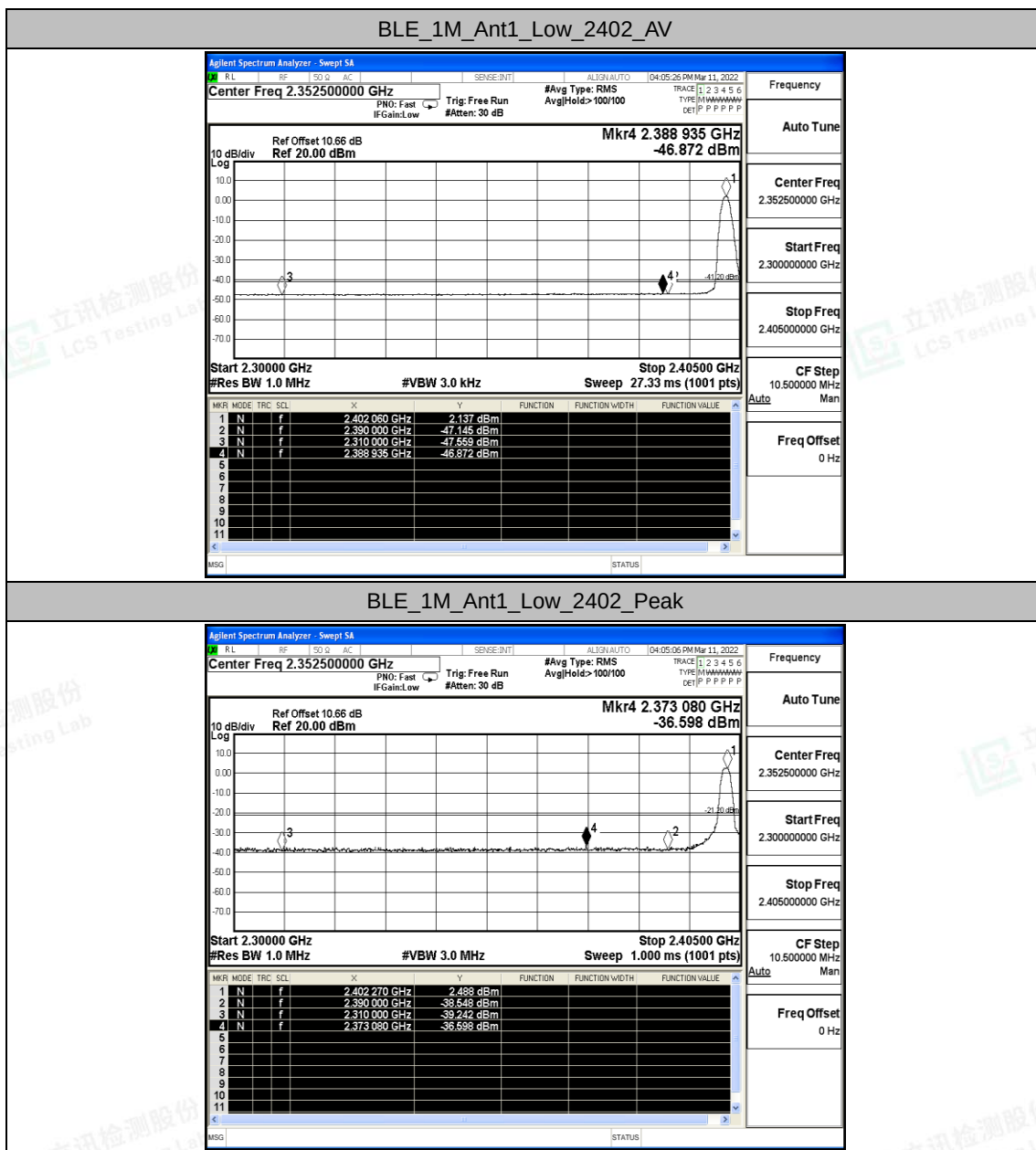
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Test Graphs



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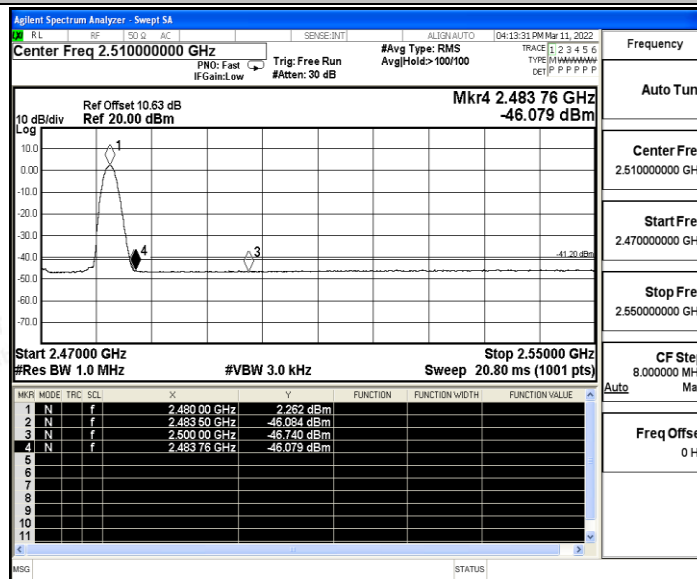
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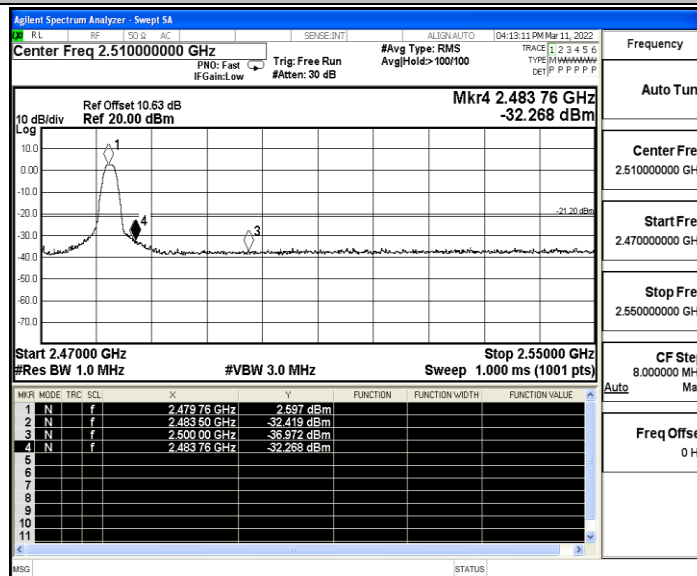
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BLE_1M_Ant1_High_2480_AV



BLE_1M_Ant1_High_2480_Peak



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