



Appendix A

RF Test Data for BLE (Conducted Measurement)

Product Name: Wireless Keyboard

Test Model: PCEA-1116-AS

Environmental Conditions

Temperature:	23.1° C
Relative Humidity:	52.3%
ATM Pressure:	100.0 kPa
Test Engineer:	Taylor Hu
Supervised by:	Ling Zhu





A.1 DTS Bandwidth

Test Result

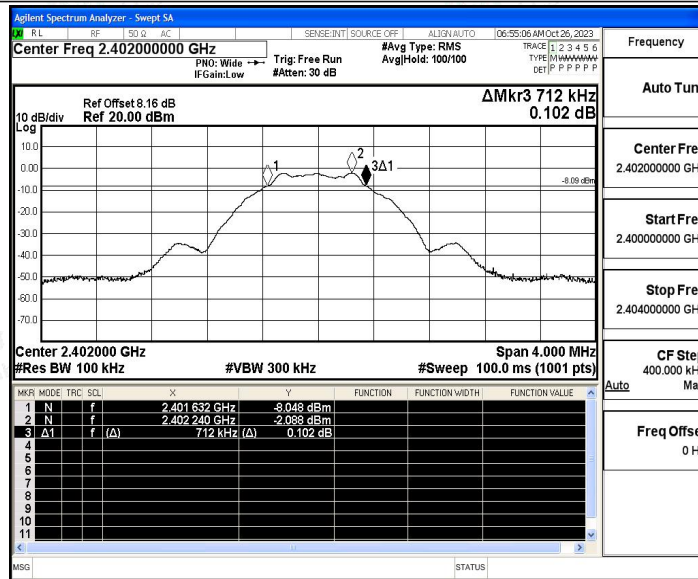
TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.712	2401.632	2402.344	0.5	PASS
		2440	0.716	2439.632	2440.348	0.5	PASS
		2480	0.716	2479.632	2480.348	0.5	PASS



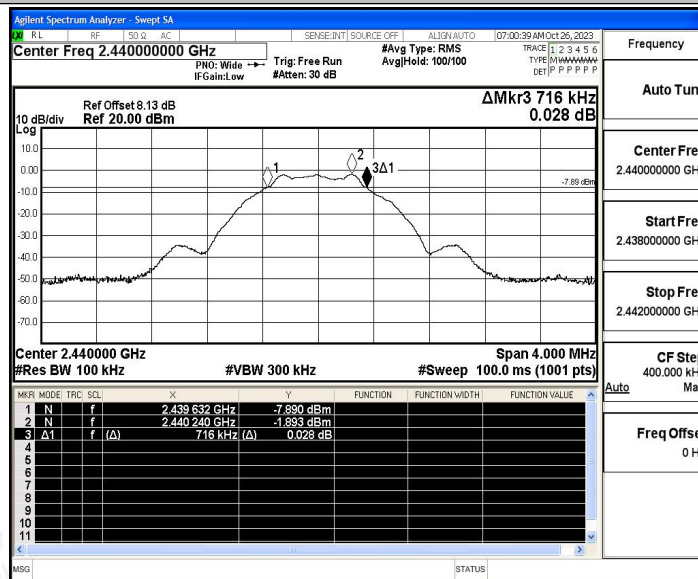


Test Graphs

BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480

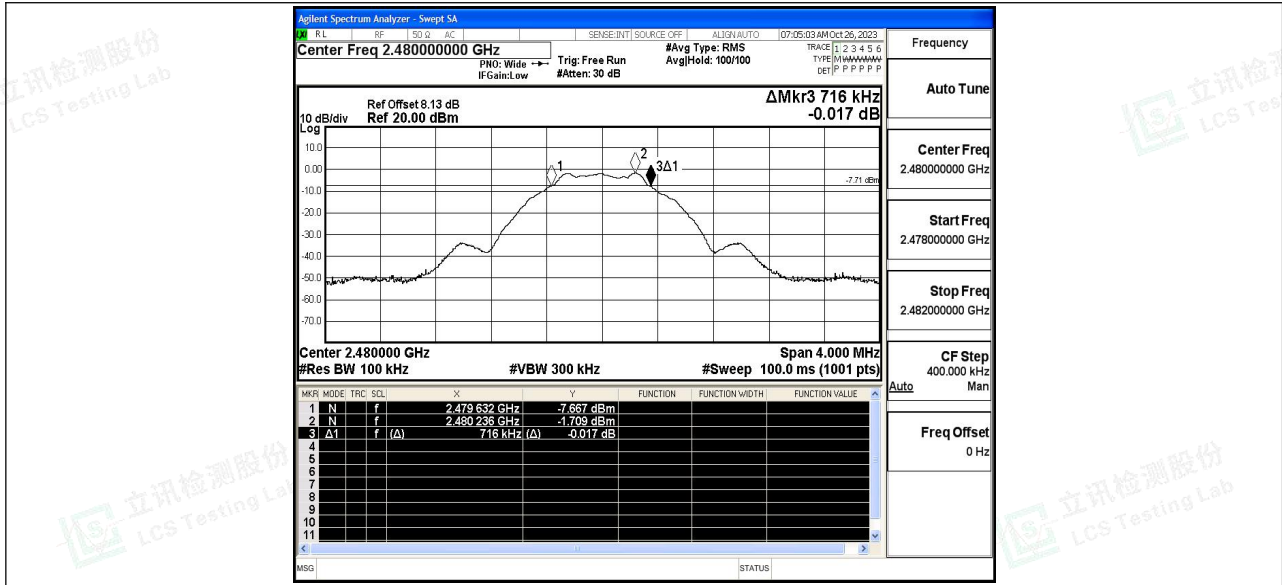


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A.2 Maximum conducted output power

Test Result

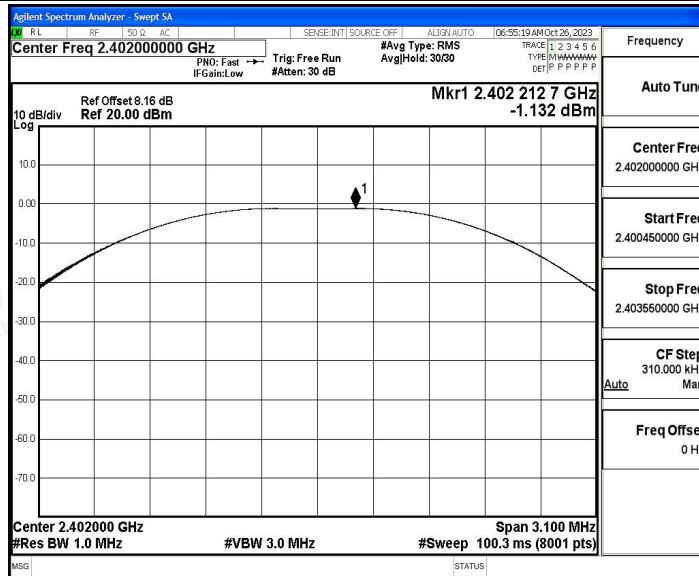
TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	-1.13	≤30	PASS
		2440	-0.94	≤30	PASS
		2480	-0.75	≤30	PASS



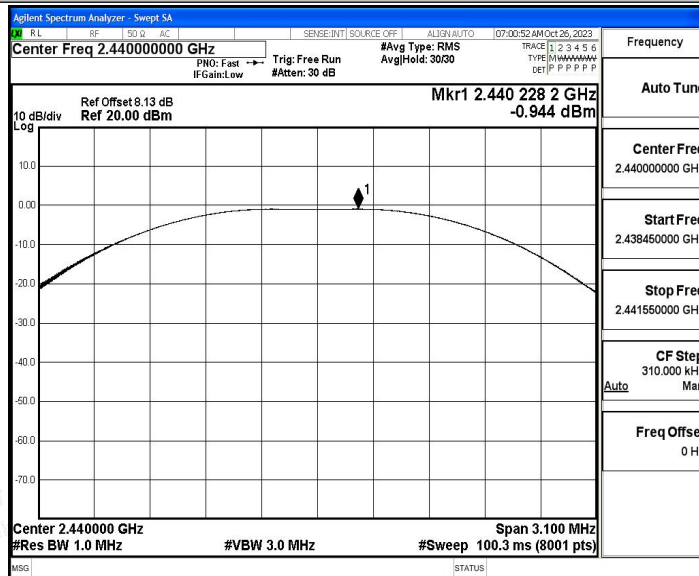


Test Graphs

BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480

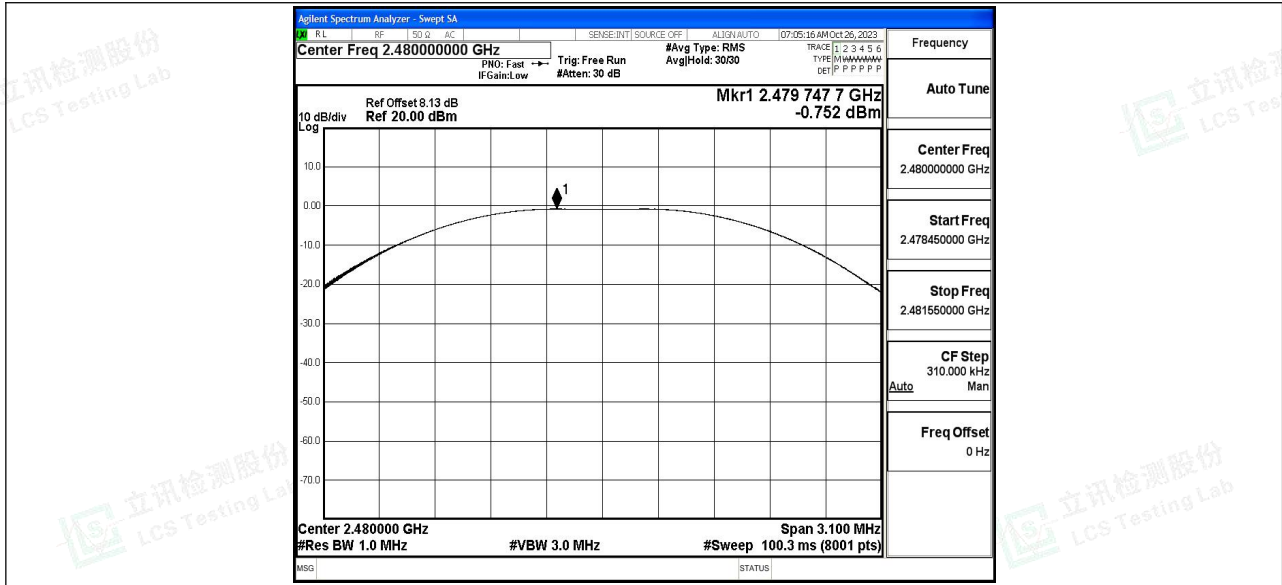


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A.3 Maximum power spectral density

Test Result

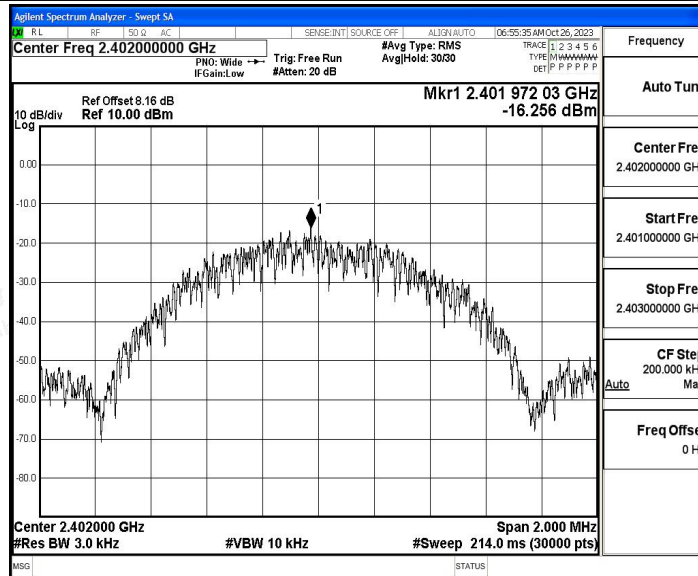
TestMode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-16.26	≤8.00	PASS
		2440	-16.02	≤8.00	PASS
		2480	-15.8	≤8.00	PASS



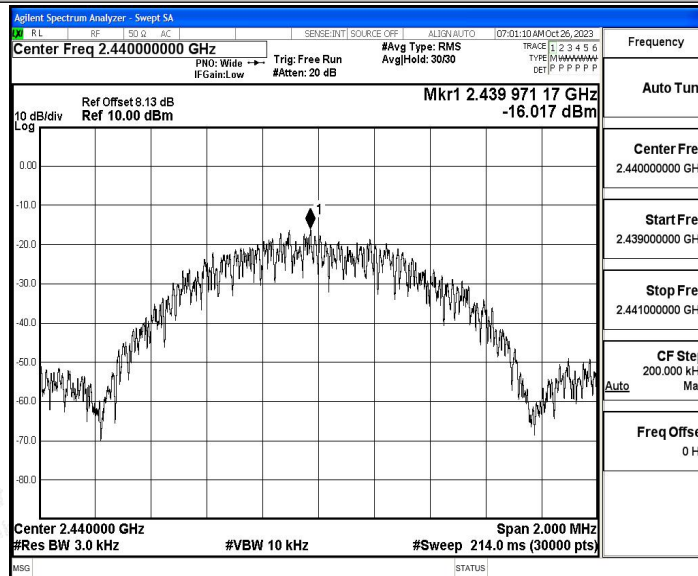


Test Graphs

BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480

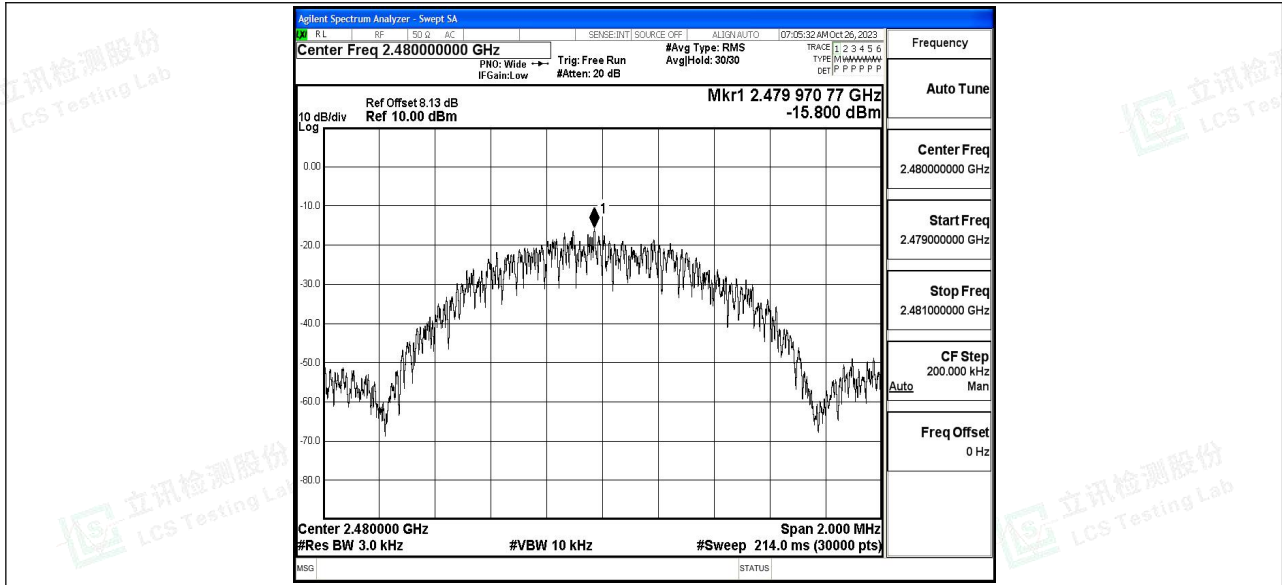


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A.4 Band edge measurements

Test Result

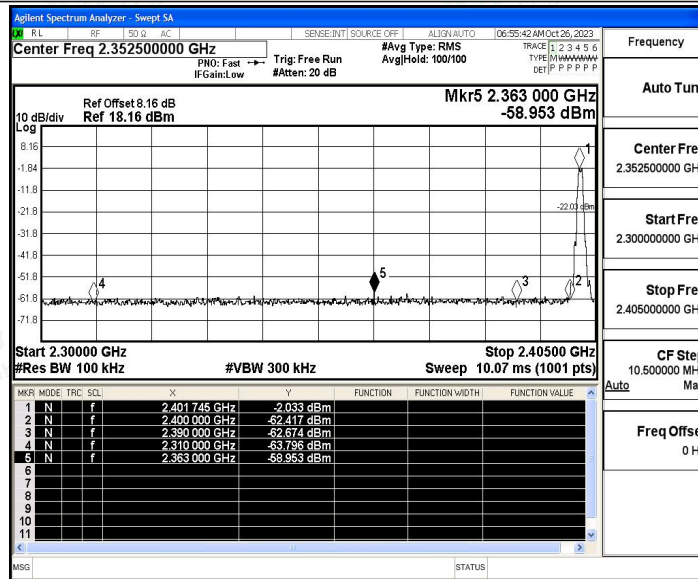
TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	-2.03	-58.95	≤ -22.03	PASS
		High	2480	-1.49	-60.17	≤ -21.49	PASS



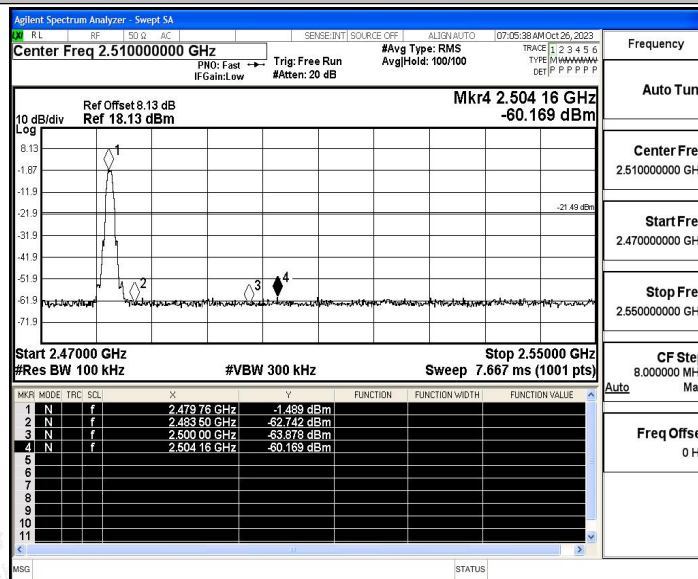


Test Graphs

BLE_1M_Ant1_Low_2402



BLE_1M_Ant1_High_2480



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A.5 Conducted Spurious Emission

Test Result

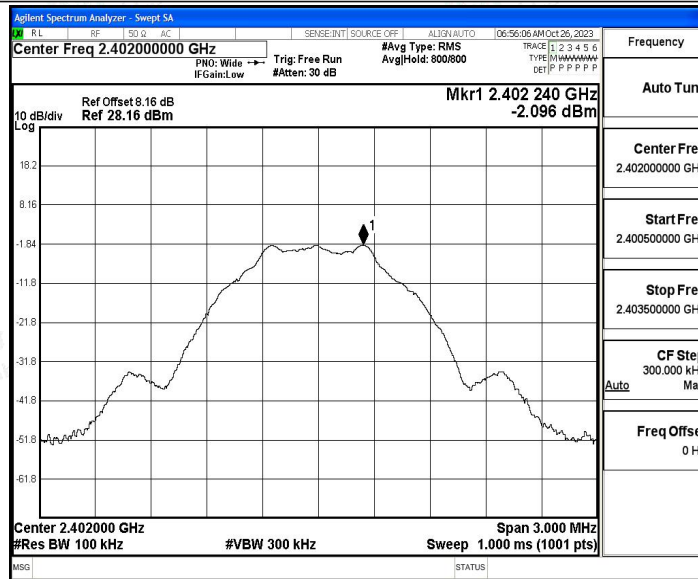
TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	-2.10	-2.10	---	PASS
			30~1000	-2.10	-60.9	≤ -22.1	PASS
			1000~26500	-2.10	-47.48	≤ -22.1	PASS
		2440	Reference	-1.89	-1.89	---	PASS
			30~1000	-1.89	-61.49	≤ -21.89	PASS
			1000~26500	-1.89	-49.18	≤ -21.89	PASS
		2480	Reference	-1.69	-1.69	---	PASS
			30~1000	-1.69	-61.94	≤ -21.69	PASS
			1000~26500	-1.69	-49.42	≤ -21.69	PASS



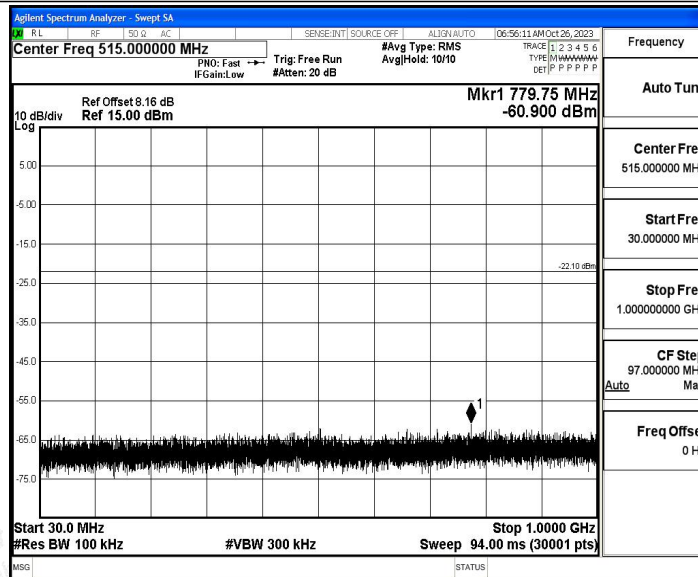


Test Graphs

BLE_1M_Ant1_2402_0~Reference



BLE_1M_Ant1_2402_30~1000



BLE_1M_Ant1_2402_1000~26500

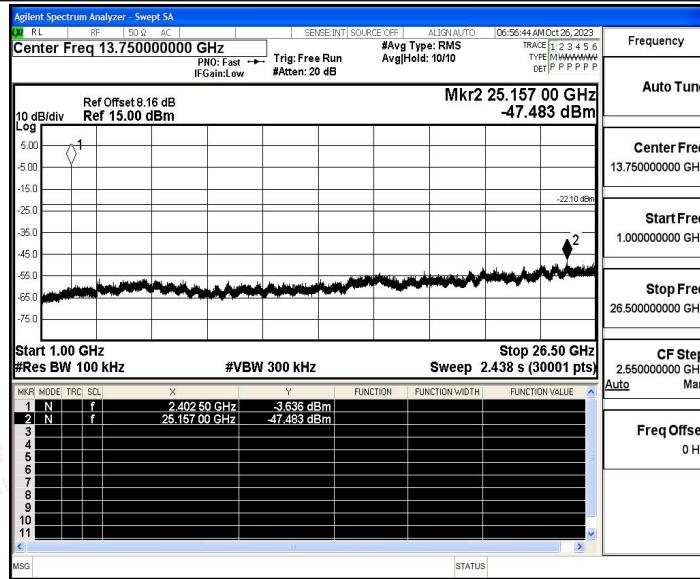


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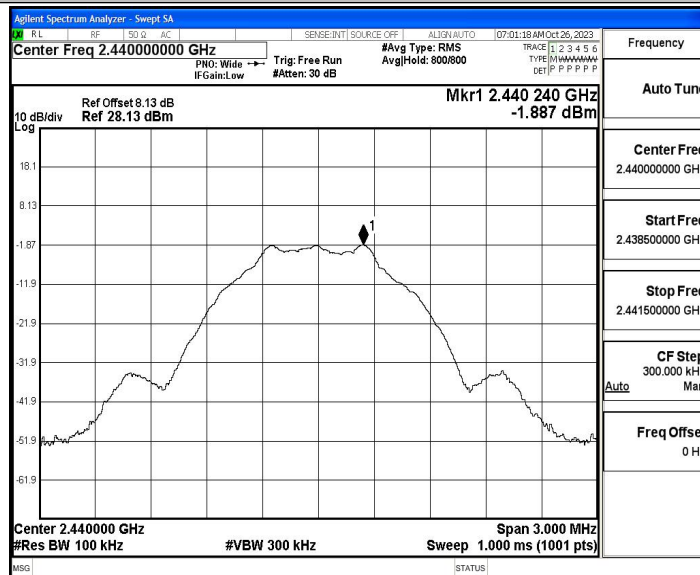
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BLE_1M_Ant1_2440_0~Reference



BLE_1M_Ant1_2440_30~1000

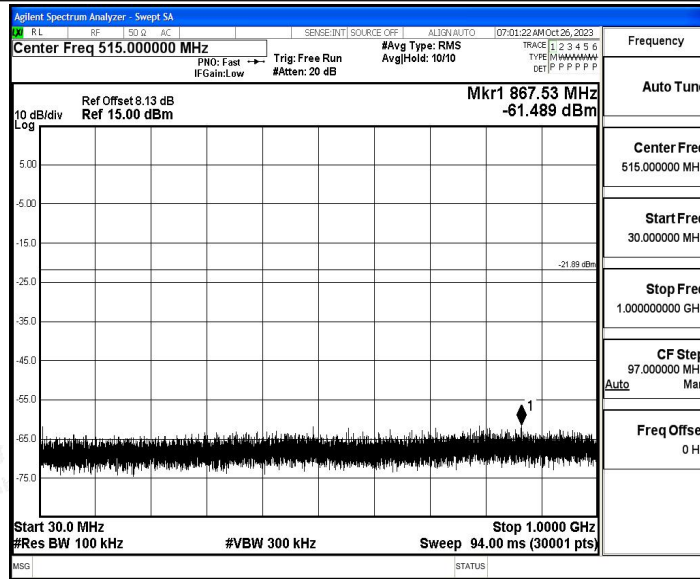


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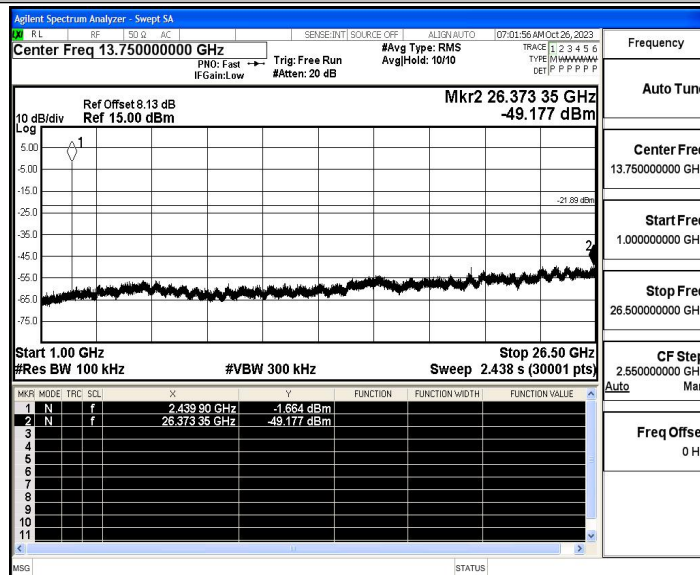
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BLE_1M_Ant1_2440_1000~26500



BLE_1M_Ant1_2480_0~Reference

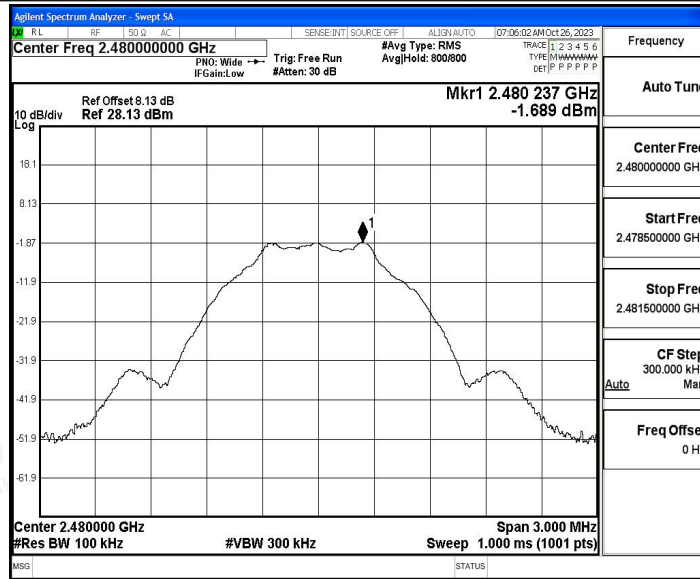


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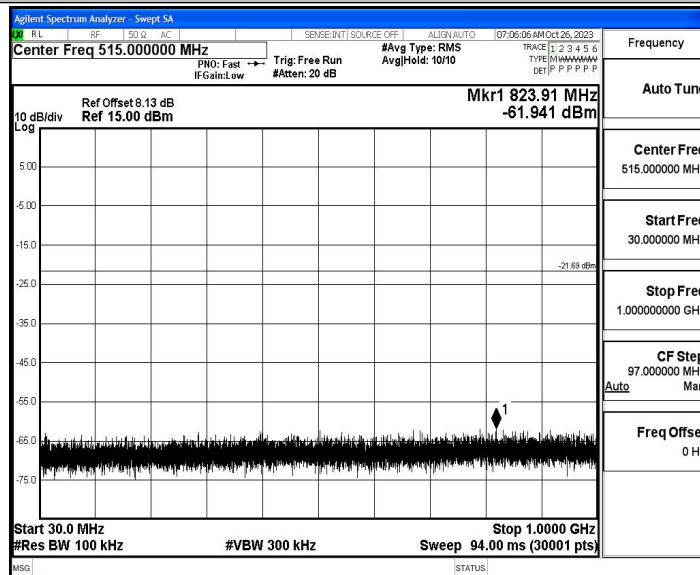
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BLE_1M_Ant1_2480_30~1000



BLE_1M_Ant1_2480_1000~26500

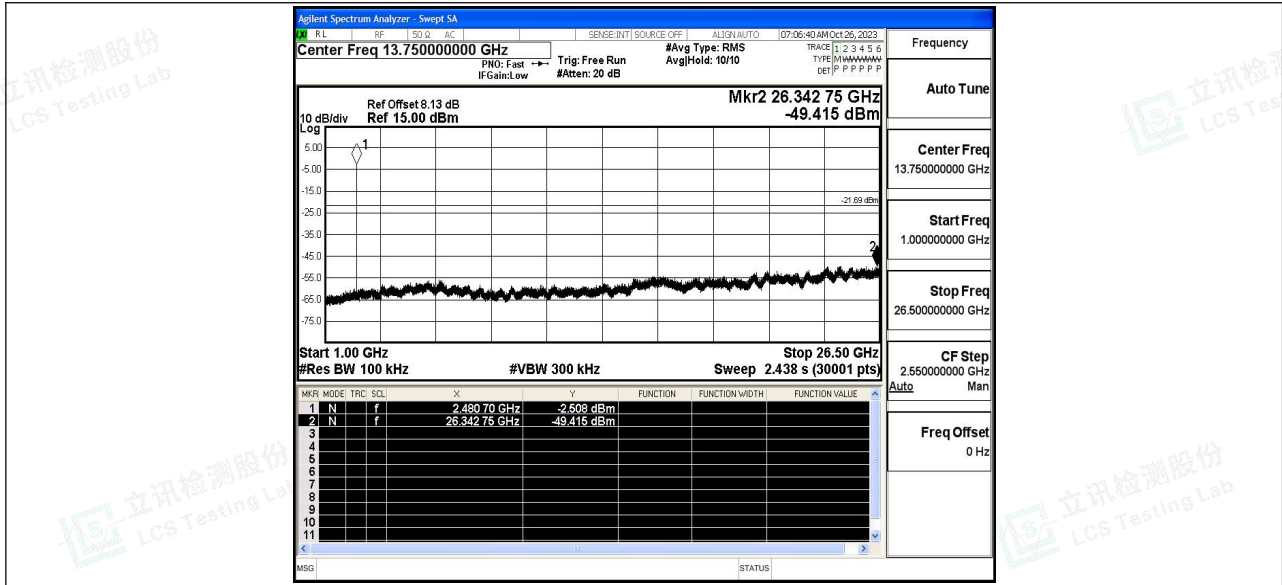


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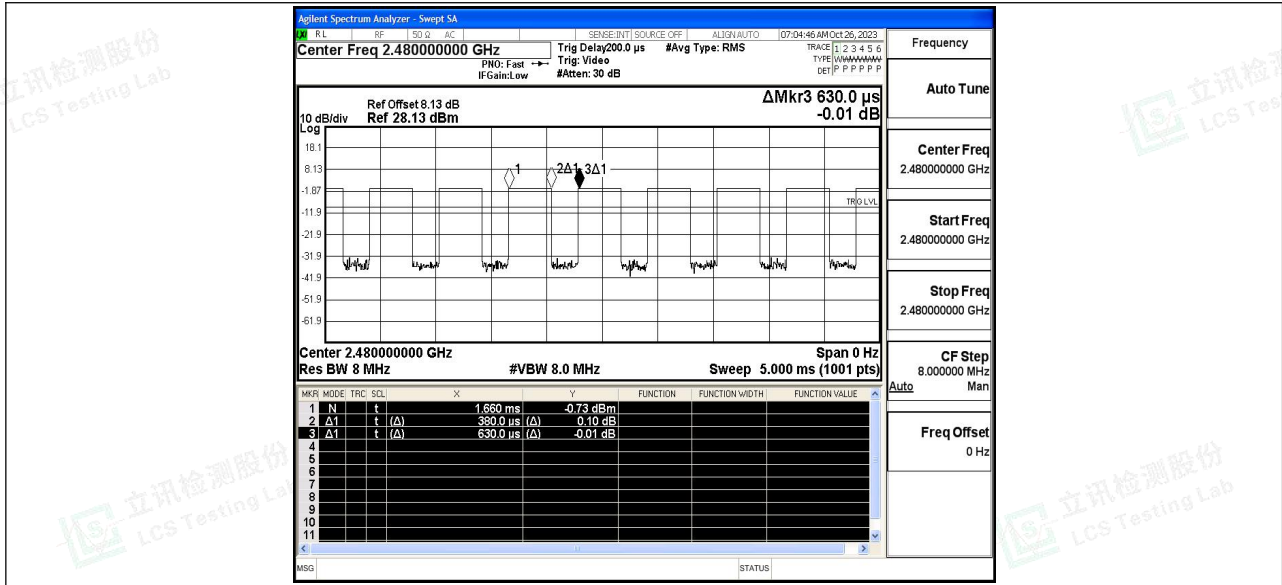


A.6 Duty Cycle

Test Result

TestMode	Antenna	Channel	ON Time [ms]	Period [ms]	X	DC [%]	xFactor	1/T	Limit	Verdict
BLE_1M	Ant1	2402	0.38	0.63	0.6032	60.32	2.20	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	---	---





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A.7 Emissions in Restricted Bands

Test Result

TestMode	Antenna	Channel Name	Channel	Detector	Freq. [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
BLE_1M	Ant1	Low	2402	AV	2310.000	-58.67	≤-41.20	36.53	≤54	PASS
				AV	2381.375	-57.67	≤-41.20	37.53	≤54	PASS
				AV	2390.000	-58.33	≤-41.20	36.87	≤54	PASS
				Peak	2310.000	-51.24	≤-21.20	43.96	≤74	PASS
				Peak	2386.835	-48.05	≤-21.20	47.15	≤74	PASS
				Peak	2390.000	-51.6	≤-21.20	43.60	≤74	PASS
		High	2480	AV	2483.500	-54.64	≤-41.20	40.56	≤54	PASS
				AV	2483.520	-54.64	≤-41.20	40.56	≤54	PASS
				AV	2500.000	-58.08	≤-41.20	37.12	≤54	PASS
				Peak	2483.500	-50.36	≤-21.20	44.84	≤74	PASS
				Peak	2494.000	-48.52	≤-21.20	46.68	≤74	PASS
				Peak	2500.000	-51.25	≤-21.20	43.95	≤74	PASS

Note:

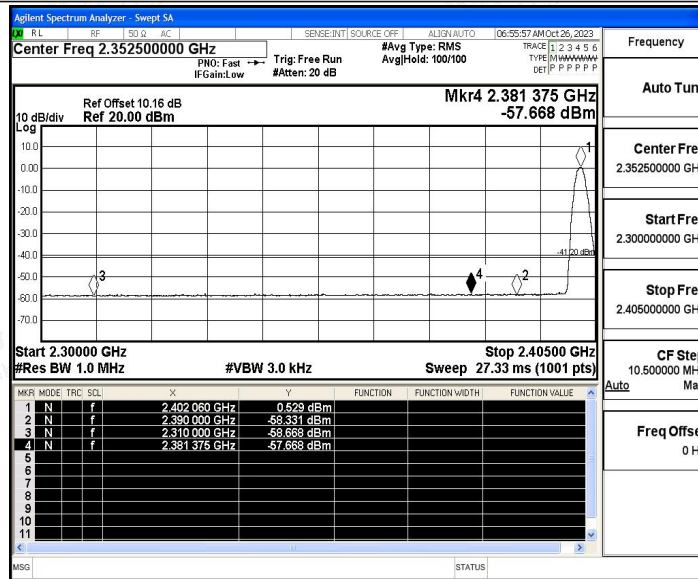
1. The Antenna Gain is compensated in the graph.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.



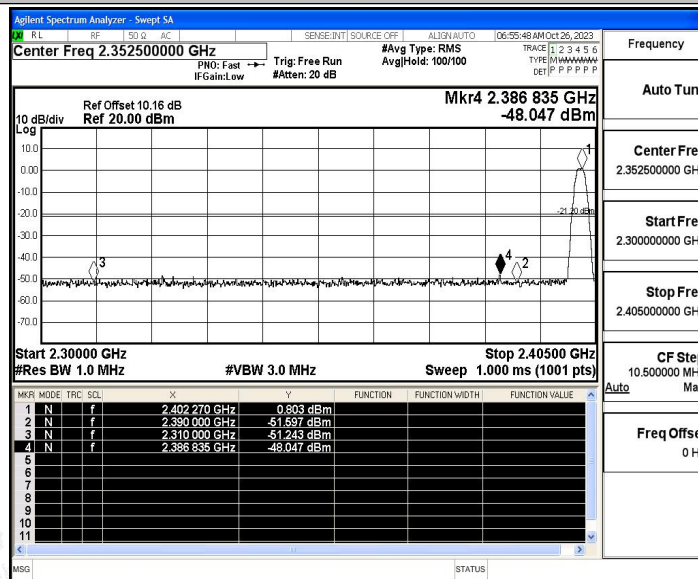


Test Graphs

BLE_1M_Ant1_Low_2402_AV



BLE_1M_Ant1_Low_2402_Peak



BLE_1M_Ant1_High_2480_AV

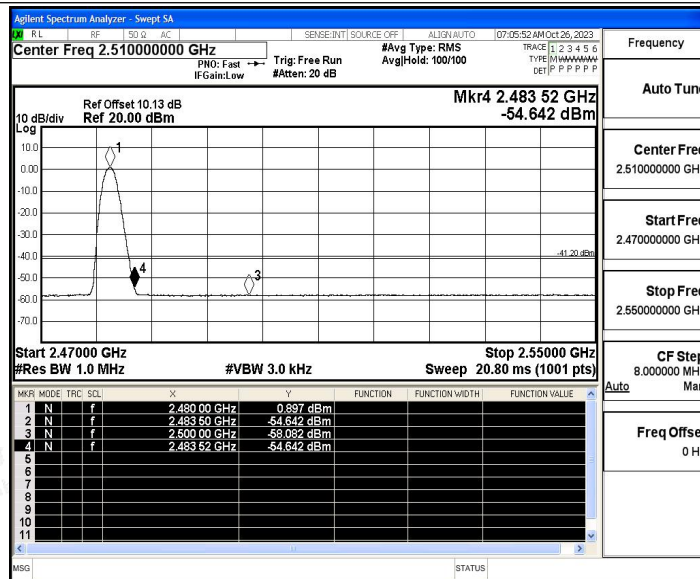


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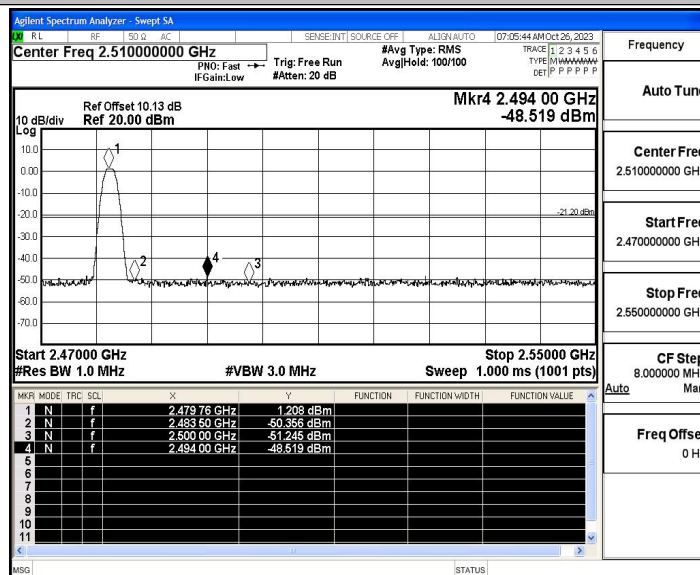
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BLE_1M_Ant1_High_2480_Peak



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