



Appendix A

RF Test Data for BT LE (Conducted Measurement)

Product Name: RGB PRO AQUARIUM LIGHT

Test Model: RGB-PRO-60W(HG028-60W)

Environmental Conditions

Temperature:	23.8℃
Relative Humidity:	52.2%
ATM Pressure:	100.0 kPa
Test Engineer:	<i>Taylor Hu</i> Taylor Hu
Supervised by:	<i>Libu</i> Li Huan



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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	0.668	2401.704	2402.372	0.5	PASS
		2440	0.660	2439.704	2440.364	0.5	PASS
		2480	0.660	2479.708	2480.368	0.5	PASS

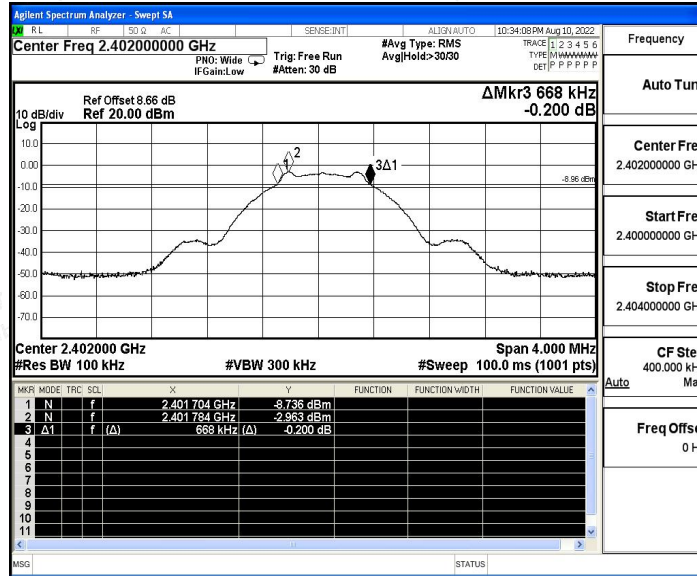


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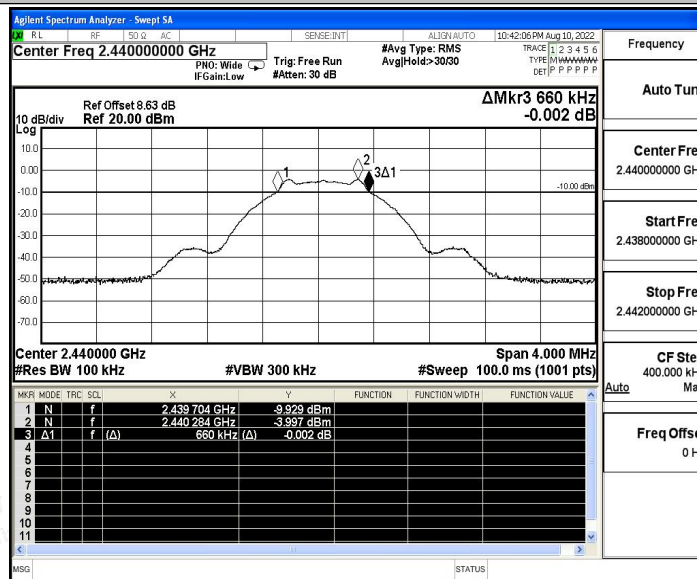


Test Graphs

BLE_1M_Ant1_2402

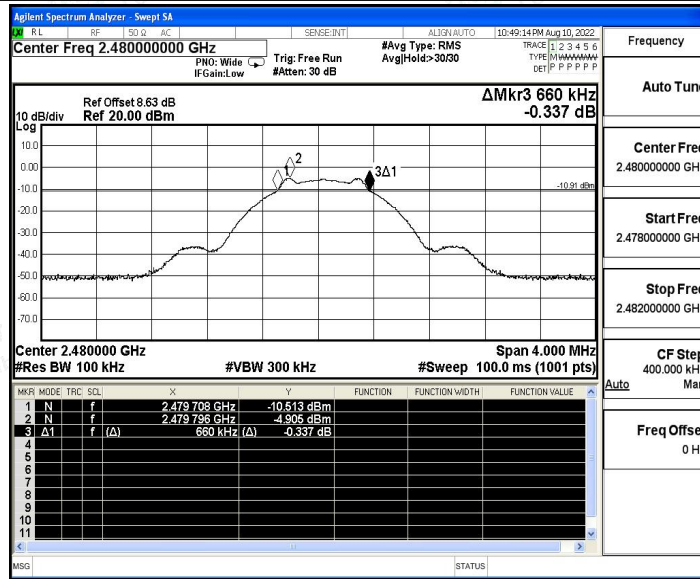


BLE_1M_Ant1_2440





BLE_1M_Ant1_2480



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A.2 Maximum conducted output power

Test Result

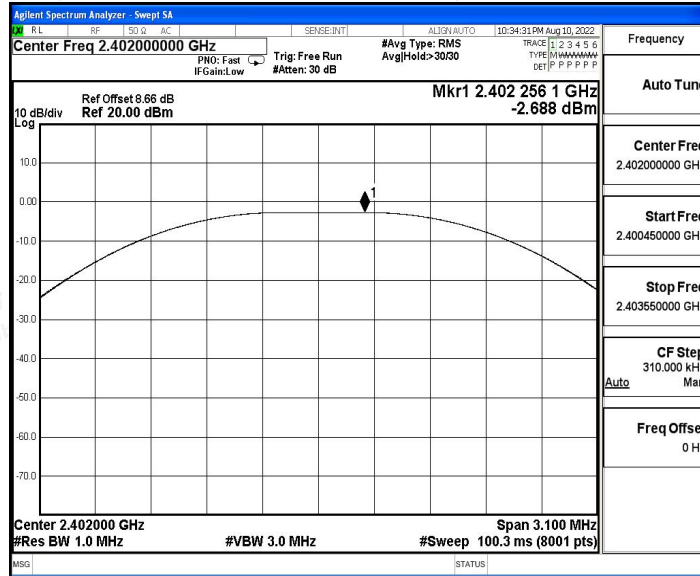
TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	-2.69	≤30	PASS
		2440	-3.84	≤30	PASS
		2480	-4.66	≤30	PASS



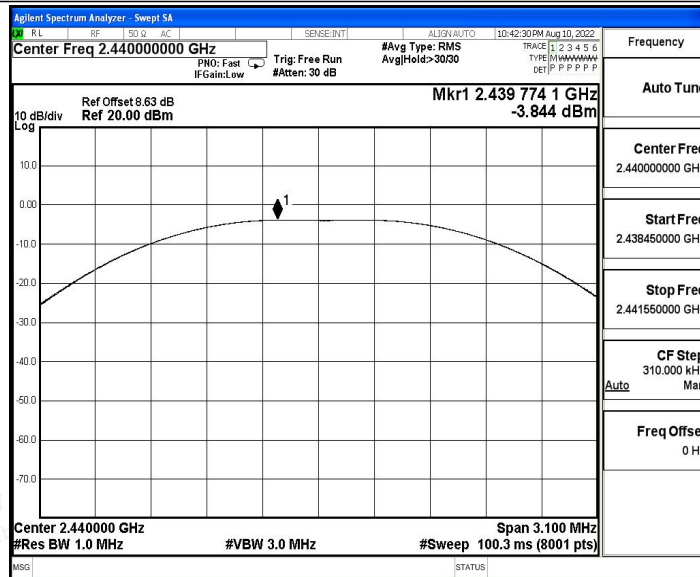


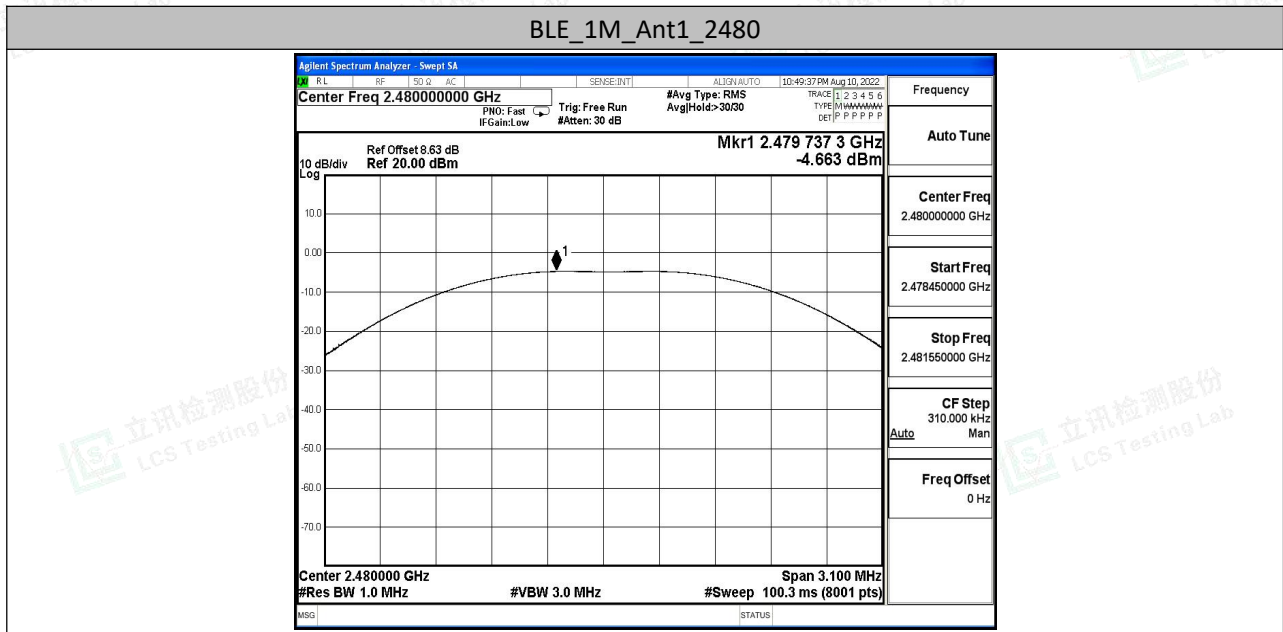
Test Graphs

BLE_1M_Ant1_2402



BLE_1M_Ant1_2440







A.3 Maximum power spectral density

Test Result

TestMode	Antenna	Channel	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-12	≤8.00	PASS
		2440	-13.2	≤8.00	PASS
		2480	-14.11	≤8.00	PASS

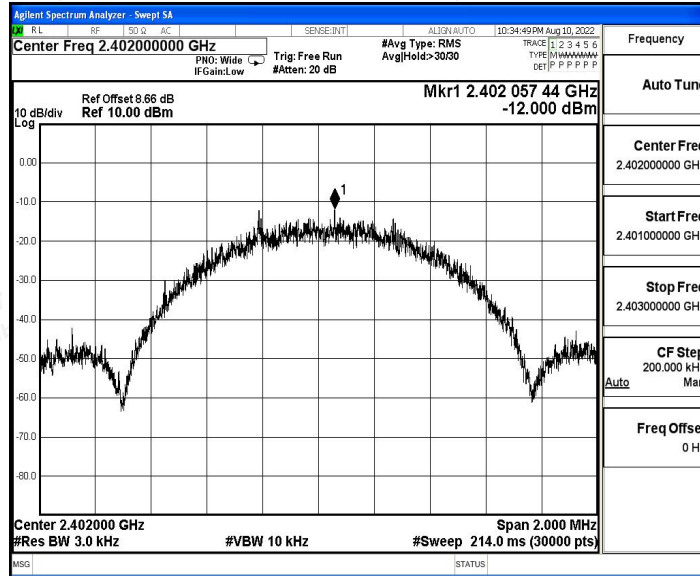


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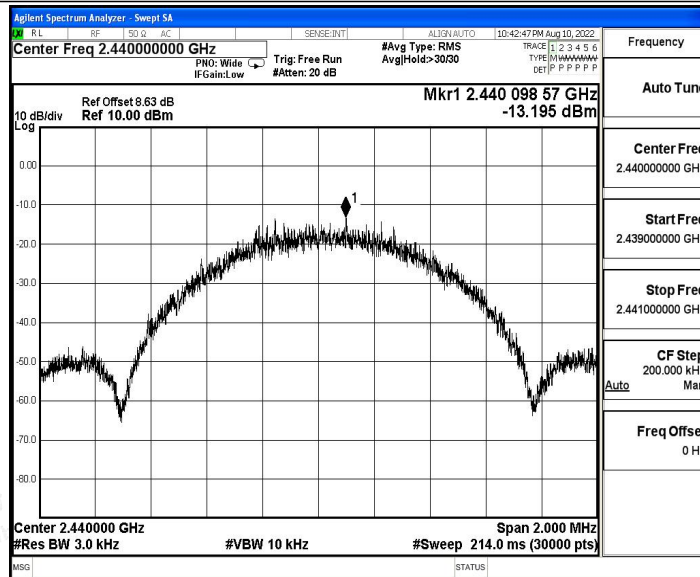


Test Graphs

BLE_1M_Ant1_2402

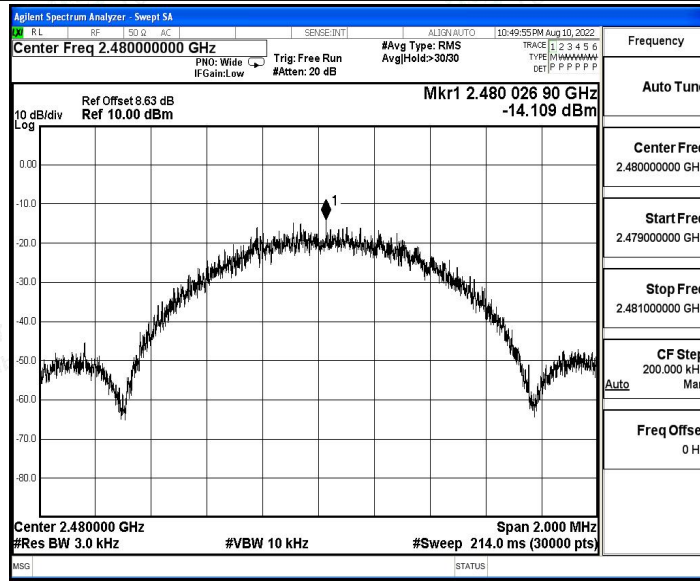


BLE_1M_Ant1_2440





BLE_1M_Ant1_2480



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A.4 Band edge measurements

Test Result

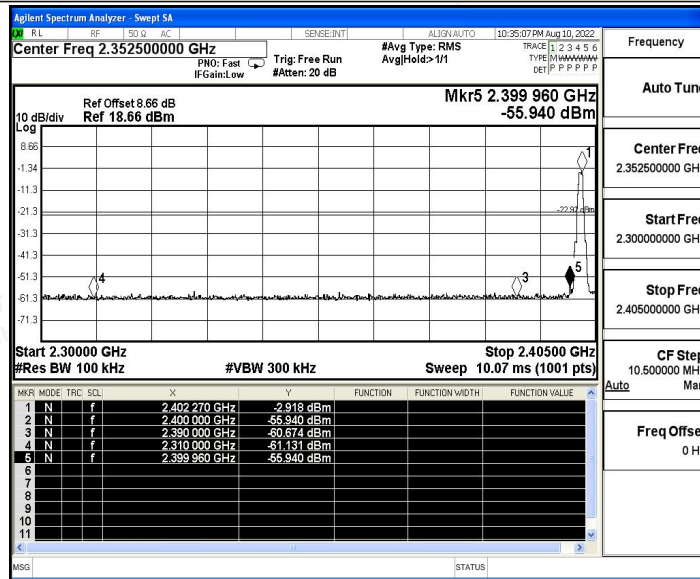
TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	-2.92	-55.94	≤ -22.92	PASS
		High	2480	-4.98	-56.01	≤ -24.98	PASS



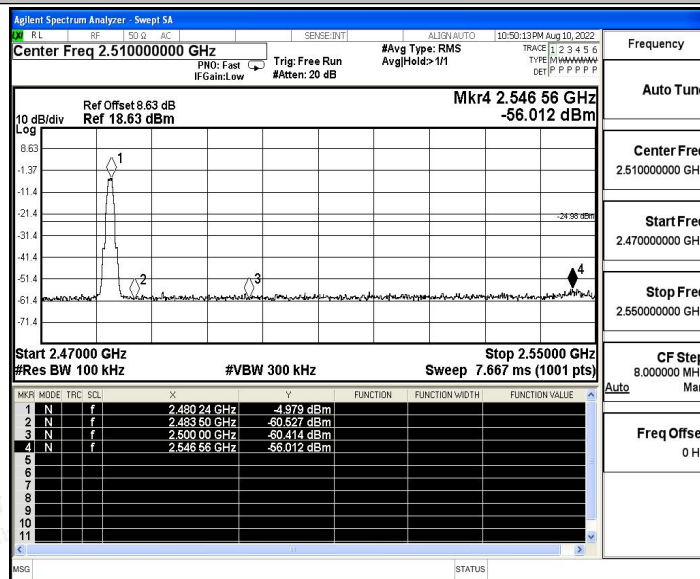


Test Graphs

BLE_1M_Ant1_Low_2402



BLE_1M_Ant1_High_2480





A.5 Conducted Spurious Emission

Test Result

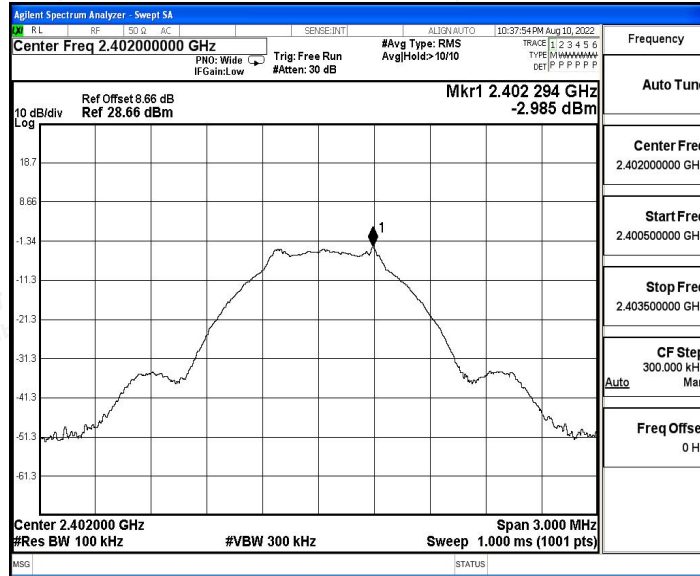
TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	-2.99	-2.99	---	PASS
			30~1000	-2.99	-60.89	≤-22.99	PASS
			1000~26500	-2.99	-45.42	≤-22.99	PASS
		2440	Reference	-4.04	-4.04	---	PASS
			30~1000	-4.04	-60.63	≤-24.04	PASS
			1000~26500	-4.04	-44.09	≤-24.04	PASS
		2480	Reference	-4.96	-4.96	---	PASS
			30~1000	-4.96	-58.09	≤-24.96	PASS
			1000~26500	-4.96	-44.05	≤-24.96	PASS



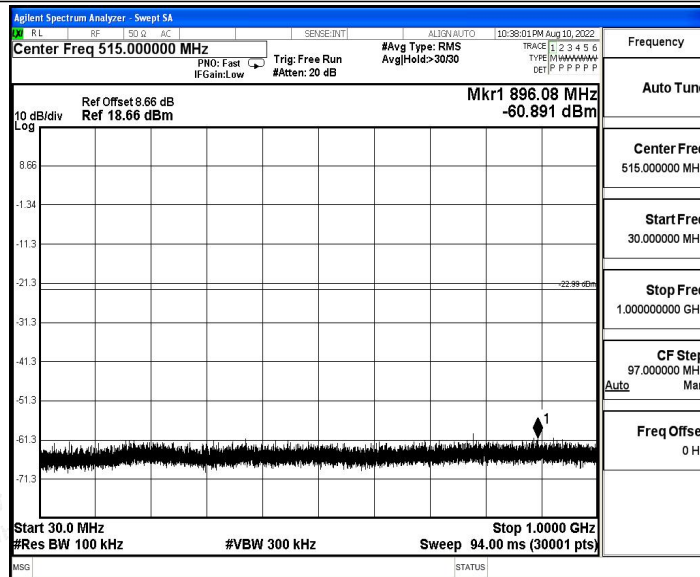


Test Graphs

BLE_1M_Ant1_2402_0~Reference

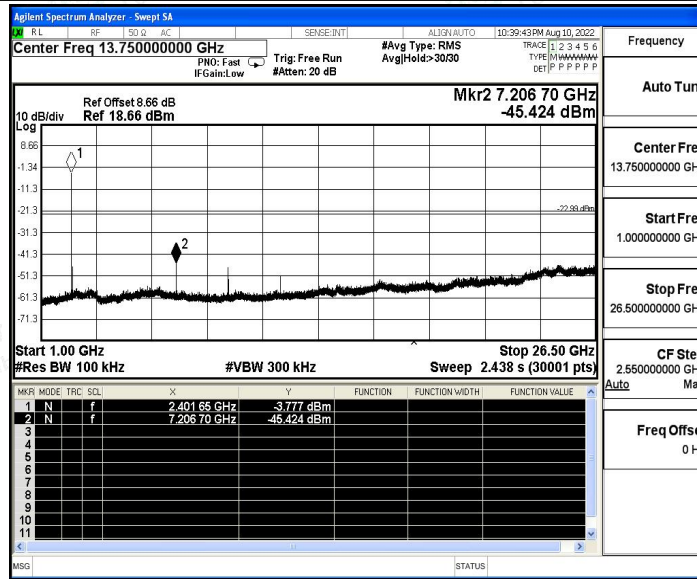


BLE_1M_Ant1_2402_30~1000

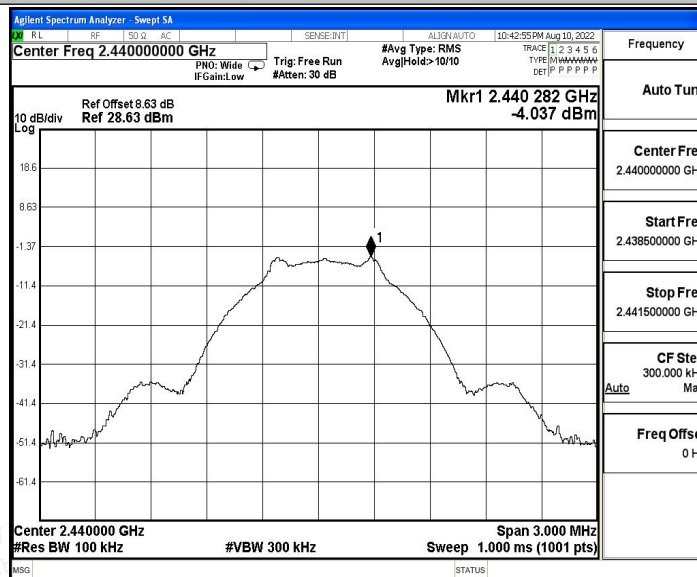




BLE_1M_Ant1_2402_1000~26500

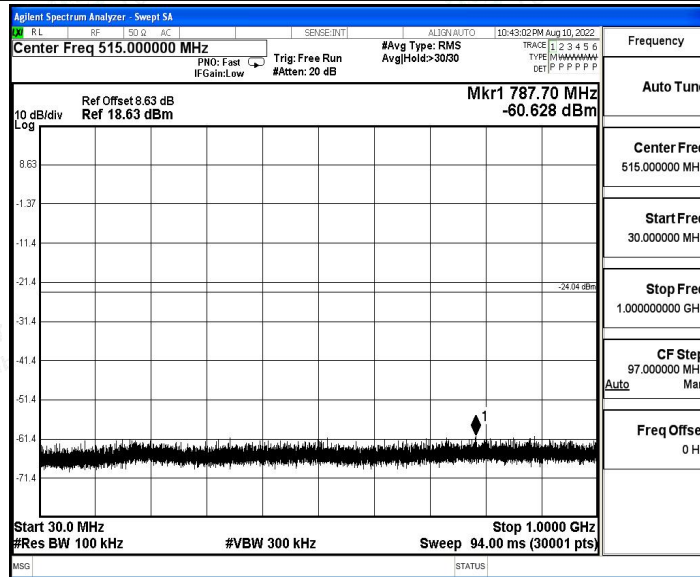


BLE_1M_Ant1_2440_0~Reference

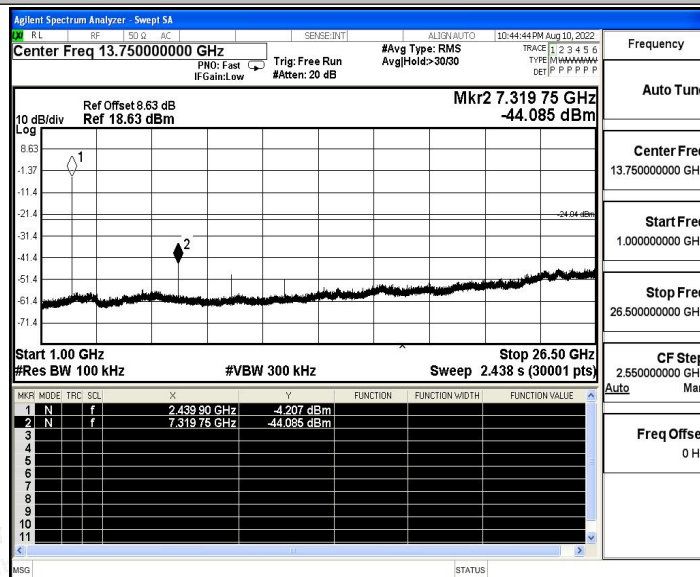




BLE_1M_Ant1_2440_30~1000

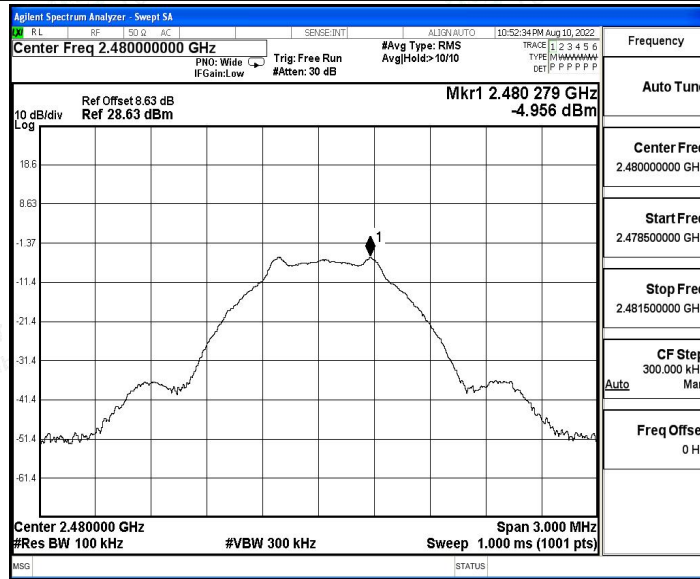


BLE_1M_Ant1_2440_1000~26500

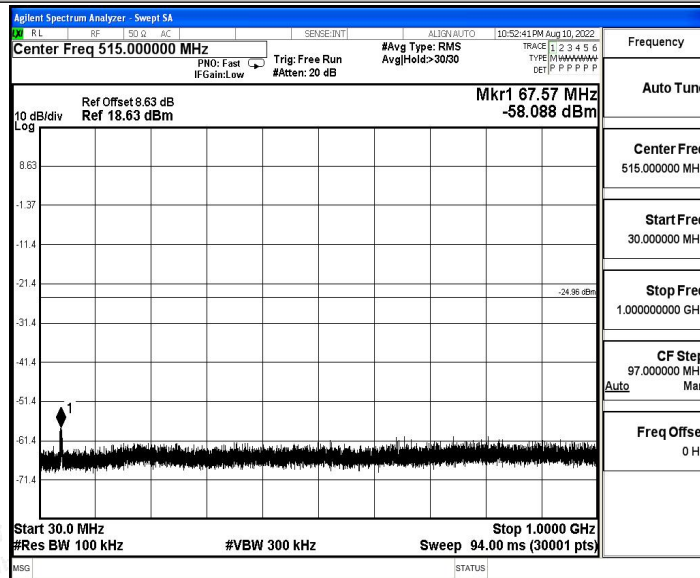




BLE_1M_Ant1_2480_0~Reference

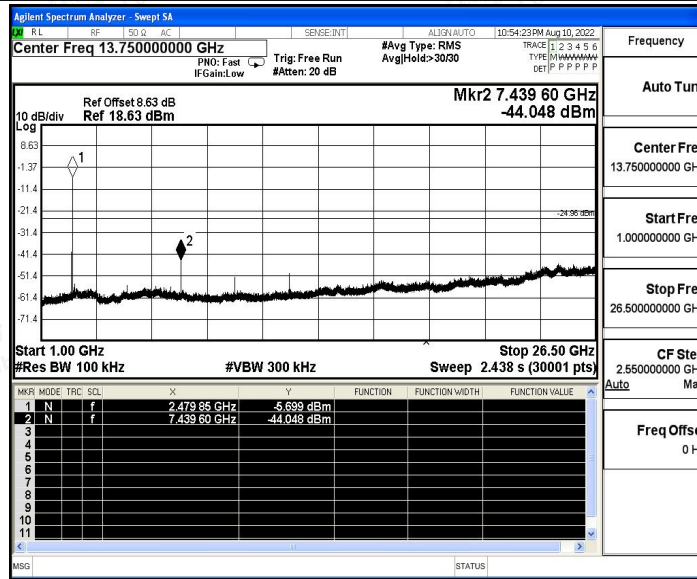


BLE_1M_Ant1_2480_30~1000





BLE_1M_Ant1_2480_1000~26500





A.6 Duty Cycle

Test Result

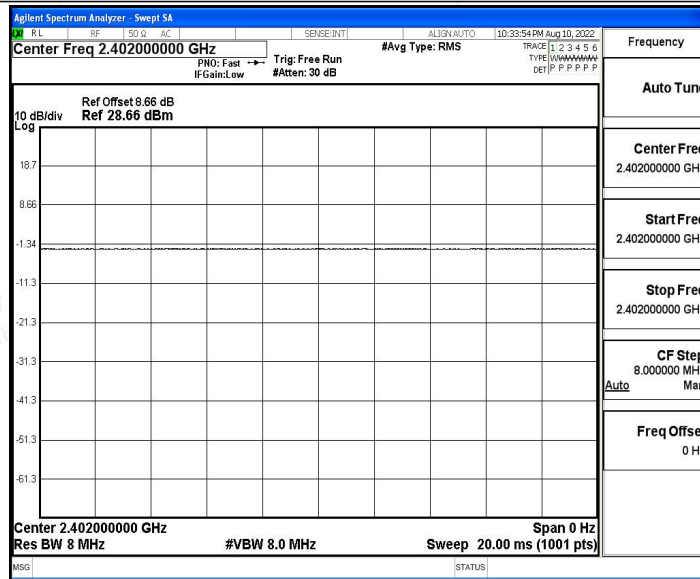
TestMode	Antenna	Channel	ON Time [ms]	Period [ms]	X	DC [%]	xFactor	1/T[kHz]	Limit	Verdict
BLE_1M	Ant1	2402	0.00	0.00	1.0000	100.00	0.00	0.01	---	---
		2440	20.00	20.00	1.0000	100.00	0.00	0.01	---	---
		2480	20.00	20.00	1.0000	100.00	0.00	0.01	---	---



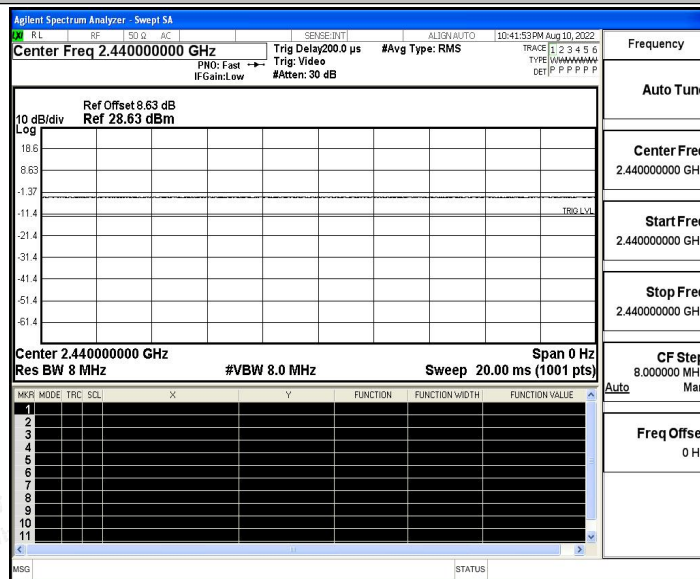


Test Graphs

BLE_1M_Ant1_2402

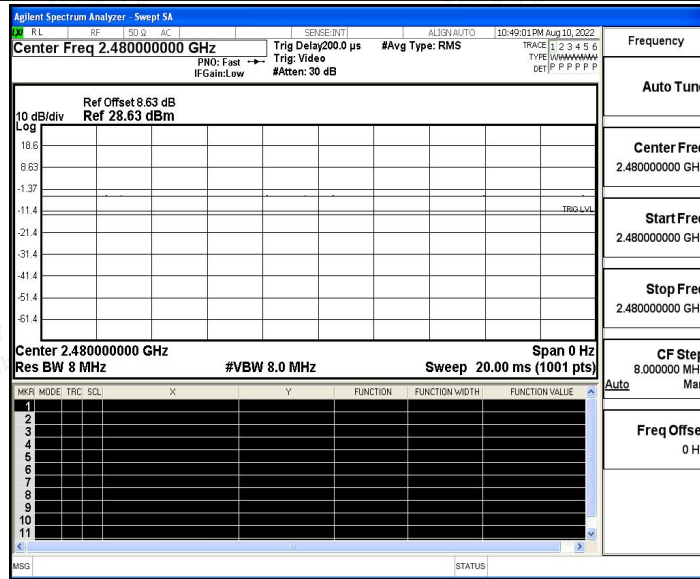


BLE_1M_Ant1_2440





BLE_1M_Ant1_2480





A.7 Emissions in Restricted Bands

Test Result

TestM ode	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	-58.25	≤-41.20	36.95	≤54	PASS
				AV	2389.880	-57.88	≤-41.20	37.32	≤54	PASS
				AV	2390.000	-57.91	≤-41.20	37.29	≤54	PASS
				Peak	2310.000	-47.5	≤-21.20	47.70	≤74	PASS
				Peak	2376.650	-46.24	≤-21.20	48.96	≤74	PASS
				Peak	2390.000	-47.76	≤-21.20	47.44	≤74	PASS
		High	2480	AV	2483.500	-56.19	≤-41.20	39.01	≤54	PASS
				AV	2483.520	-56.19	≤-41.20	39.01	≤54	PASS
				AV	2500.000	-57.37	≤-41.20	37.83	≤54	PASS
				Peak	2483.500	-47.12	≤-21.20	48.08	≤74	PASS
				Peak	2494.800	-46.01	≤-21.20	49.19	≤74	PASS
				Peak	2500.000	-47.35	≤-21.20	47.85	≤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.

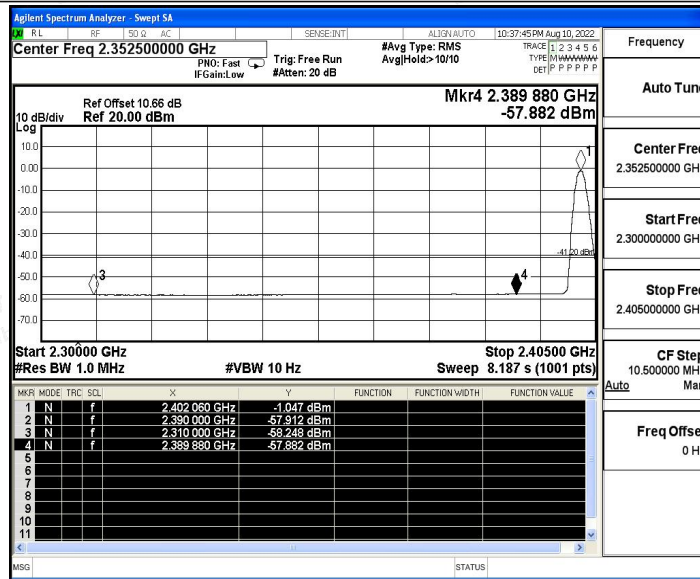


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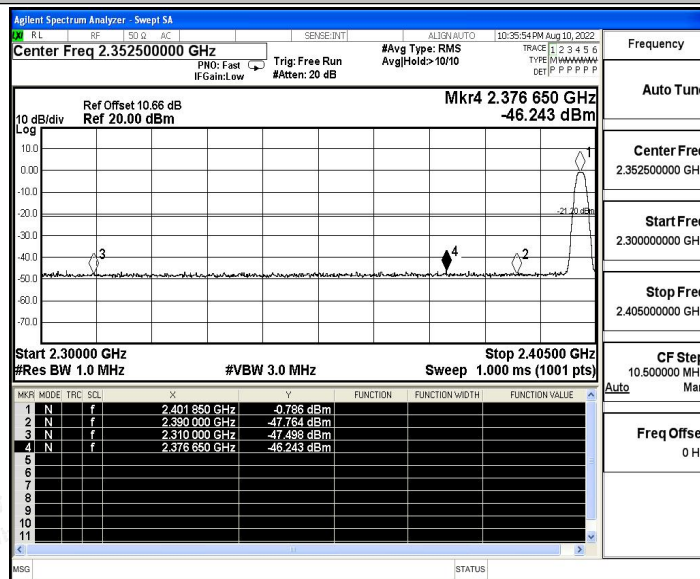


Test Graphs

BLE_1M_Ant1_Low_2402_AV

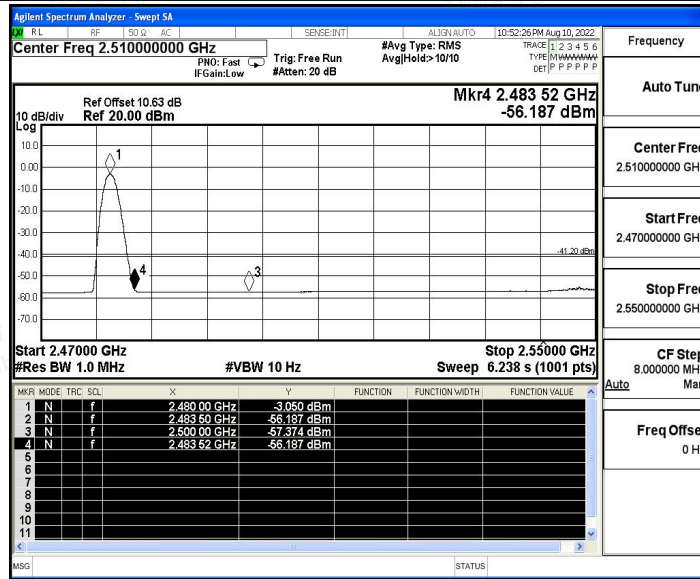


BLE_1M_Ant1_Low_2402_Peak

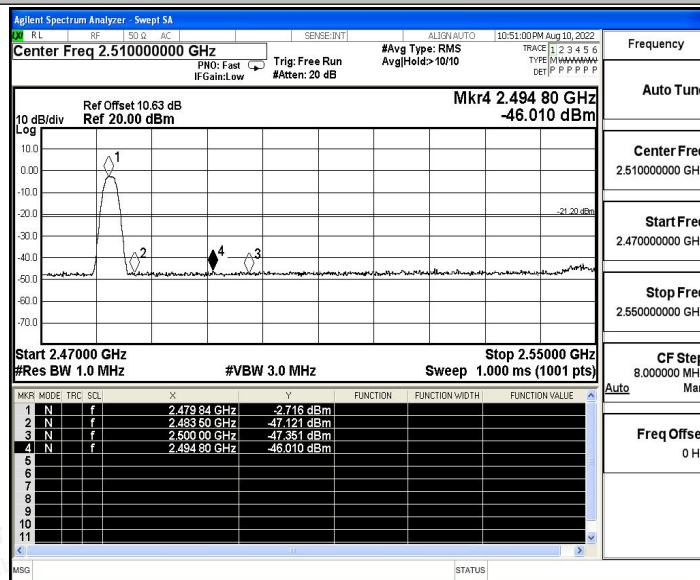




BLE_1M_Ant1_High_2480_AV



BLE_1M_Ant1_High_2480_Peak



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