



Appendix A

RF Test Data for BT LE V5.0(DTS) (Conducted Measurement)

Product Name: Smart Lock

Test Model: DLBOB02

Environmental Conditions

Temperature:	23.5℃
Relative Humidity:	52.2%
ATM Pressure:	100.0 kPa
Test Engineer:	 Mark Chen
Supervised by:	 Li Huan



A.1 DTS Bandwidth

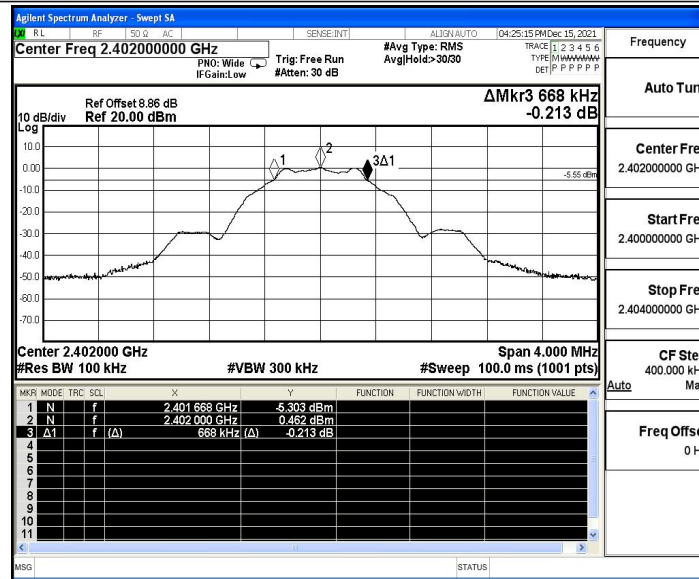
Test Result

TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.668	2401.668	2402.336	0.5	PASS
		2440	0.664	2439.668	2440.332	0.5	PASS
		2480	0.672	2479.660	2480.332	0.5	PASS

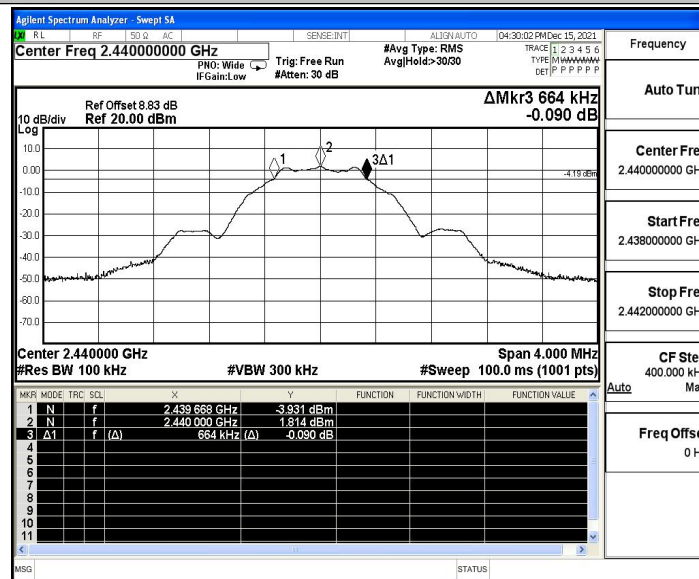


Test Graphs

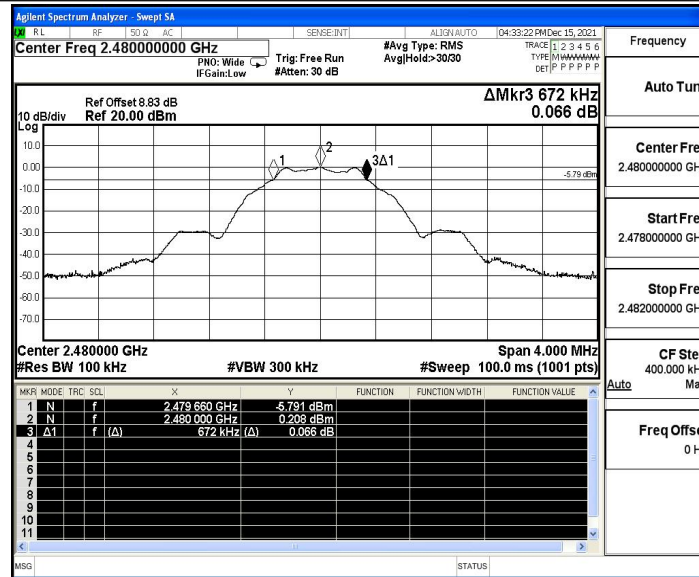
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480





A.2 Maximum peak conducted output power

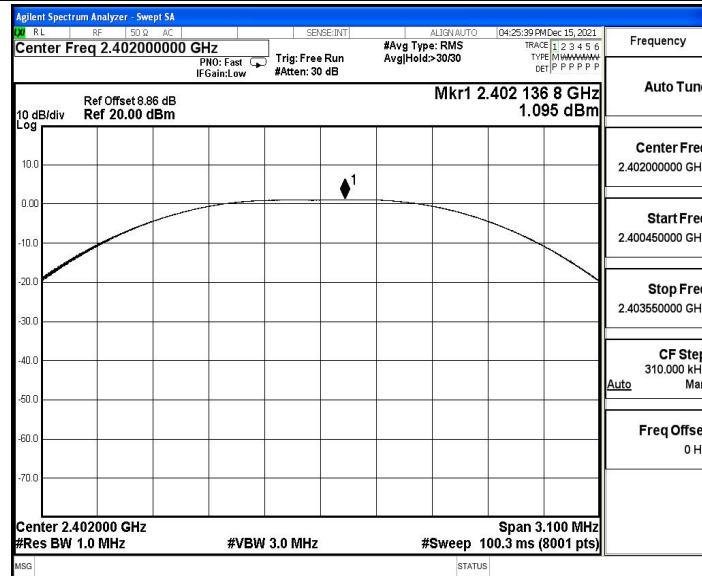
Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	1.1	≤ 30	PASS
		2440	2.35	≤ 30	PASS
		2480	0.75	≤ 30	PASS

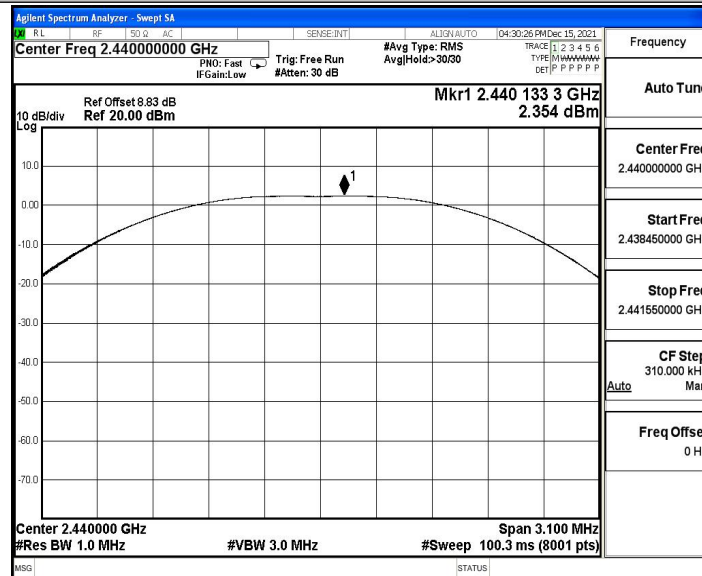


Test Graphs

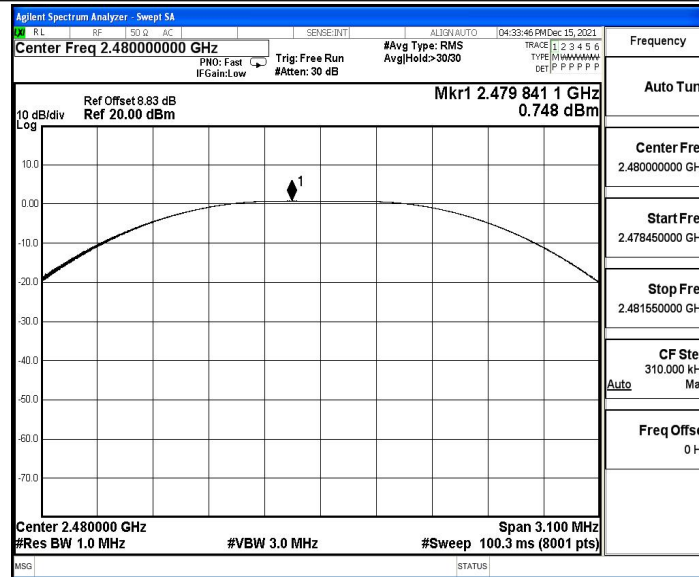
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480





A.3 Maximum power spectral density

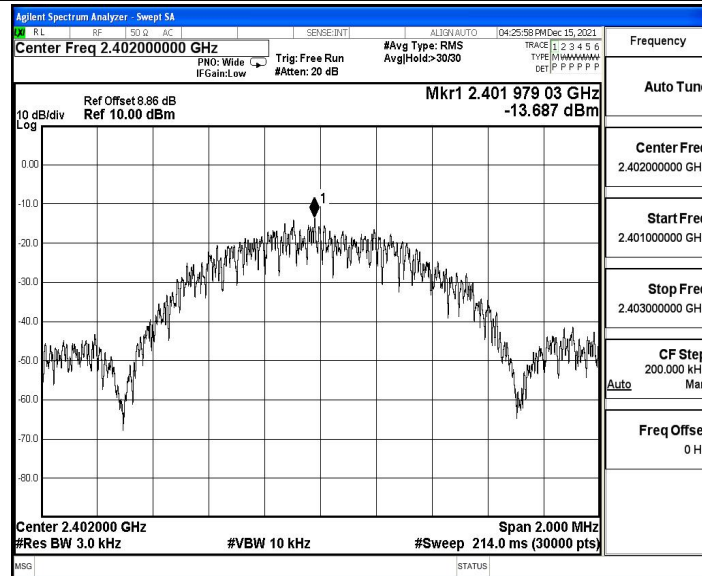
Test Result

TestMode	Antenna	Channel	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-13.69	≤8	PASS
		2440	-12.4	≤8	PASS
		2480	-14.04	≤8	PASS

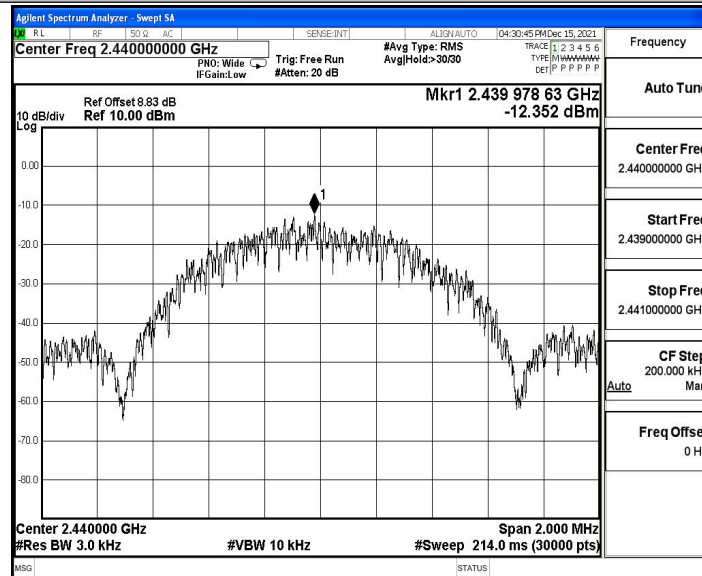


Test Graphs

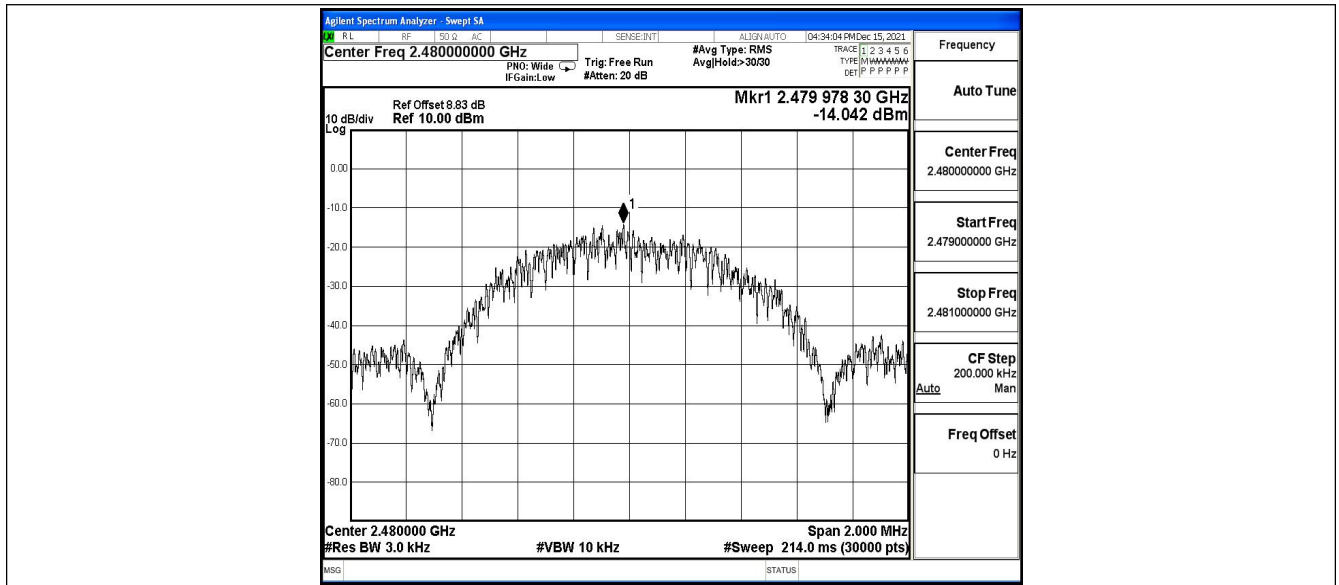
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480





A.4 Band edge measurements

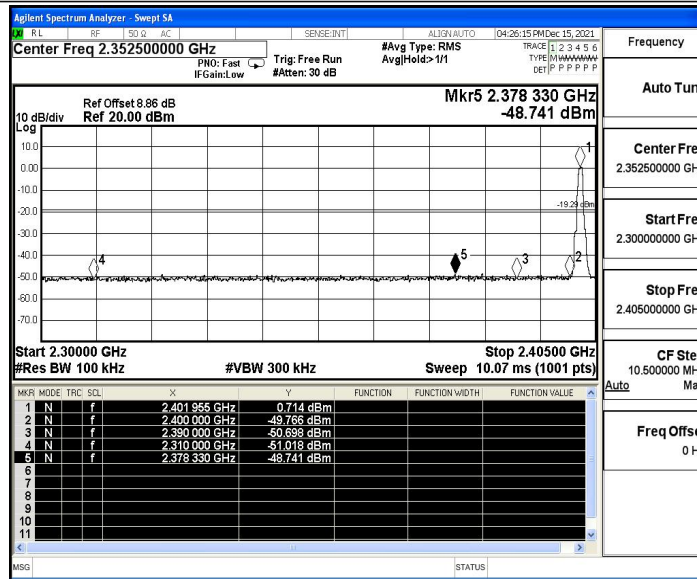
Test Result

TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	0.71	-48.74	≤ -19.29	PASS
		High	2480	0.38	-47.66	≤ -19.62	PASS

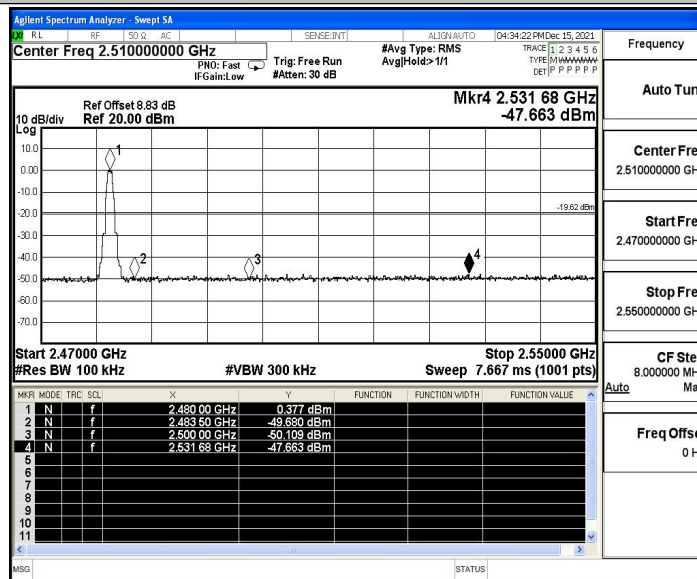


Test Graphs

BLE_1M_Ant1_Low_2402



BLE_1M_Ant1_High_2480





A.5 Conducted Spurious Emission

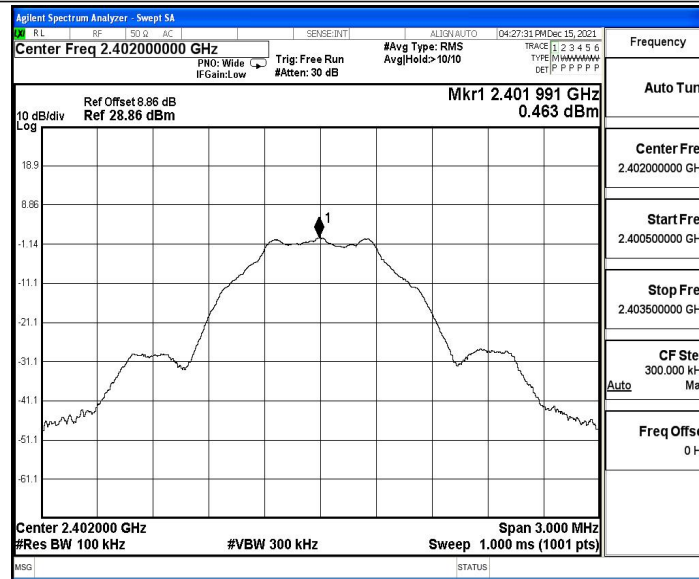
Test Result

TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	0.43	0.43	---	PASS
			30~1000	0.43	-60	≤ -19.57	PASS
			1000~26500	0.43	-45.86	≤ -19.57	PASS
		2440	Reference	1.82	1.82	---	PASS
			30~1000	1.82	-59.7	≤ -18.18	PASS
			1000~26500	1.82	-44.9	≤ -18.18	PASS
		2480	Reference	0.20	0.20	---	PASS
			30~1000	0.20	-60.74	≤ -19.8	PASS
			1000~26500	0.20	-46.05	≤ -19.8	PASS

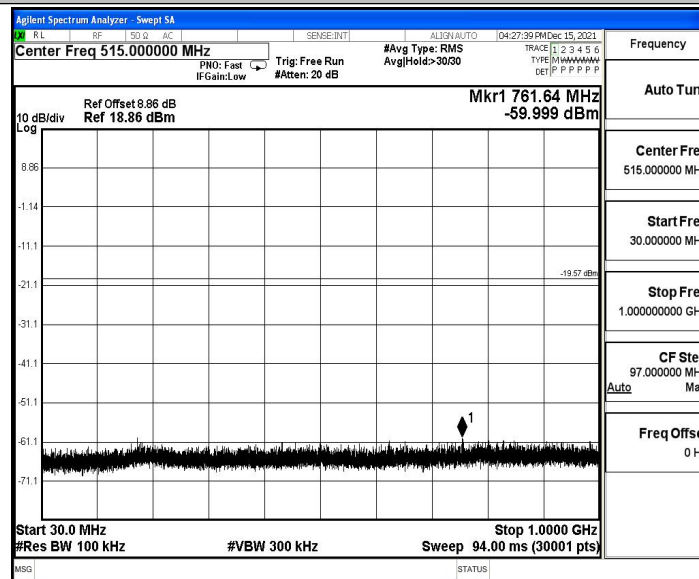


Test Graphs

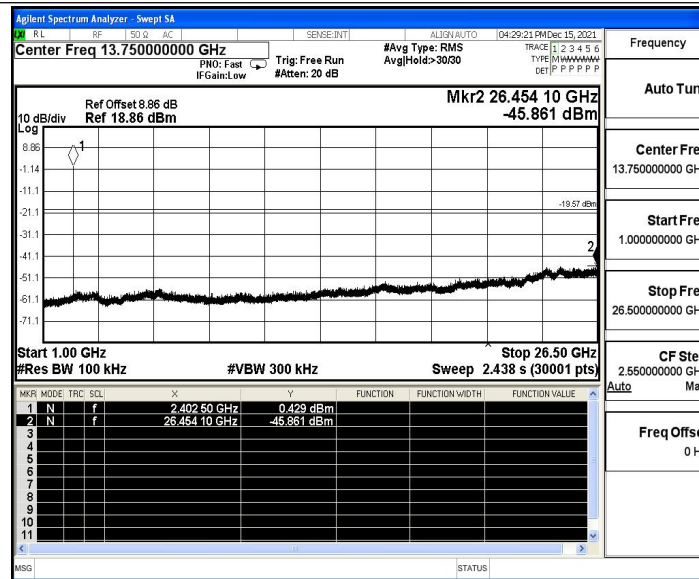
BLE_1M_Ant1_2402_0~Reference



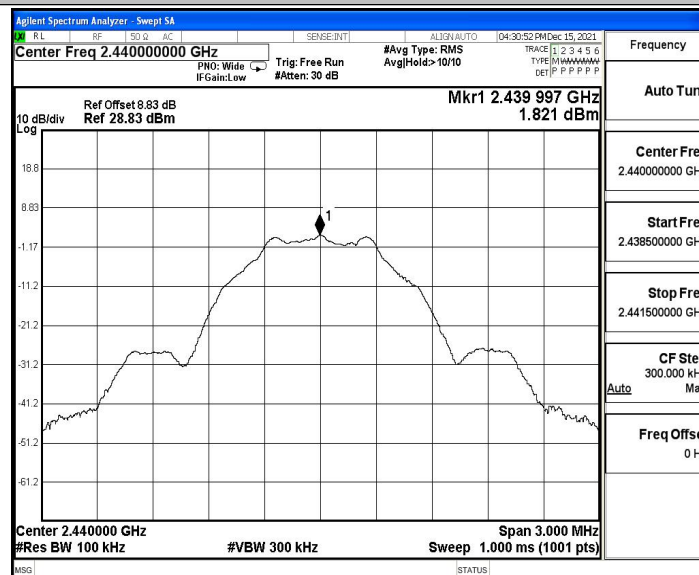
BLE_1M_Ant1_2402_30~1000



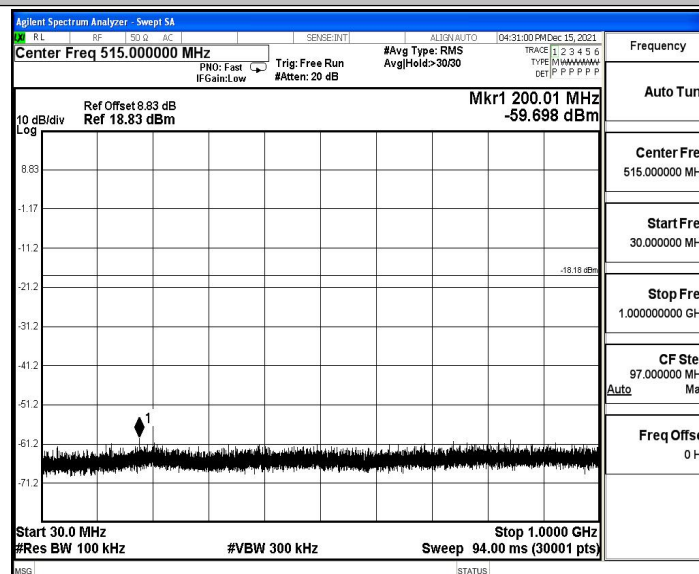
BLE_1M_Ant1_2402_1000~26500



BLE_1M_Ant1_2440_0~Reference

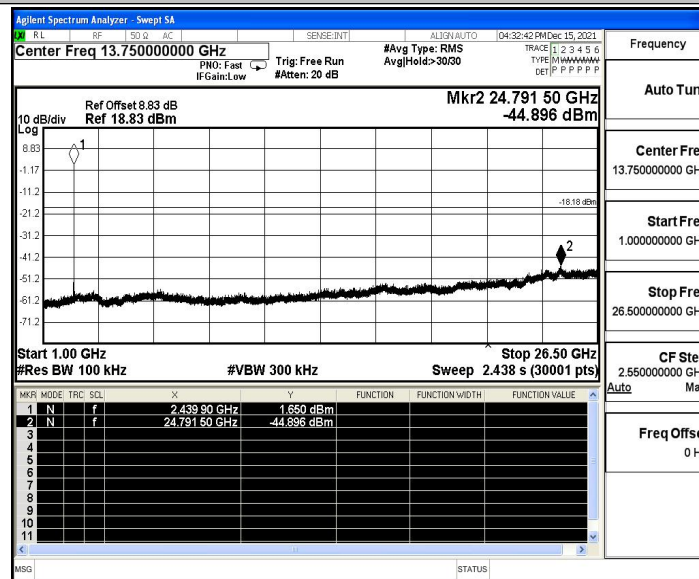


BLE_1M_Ant1_2440_30~1000

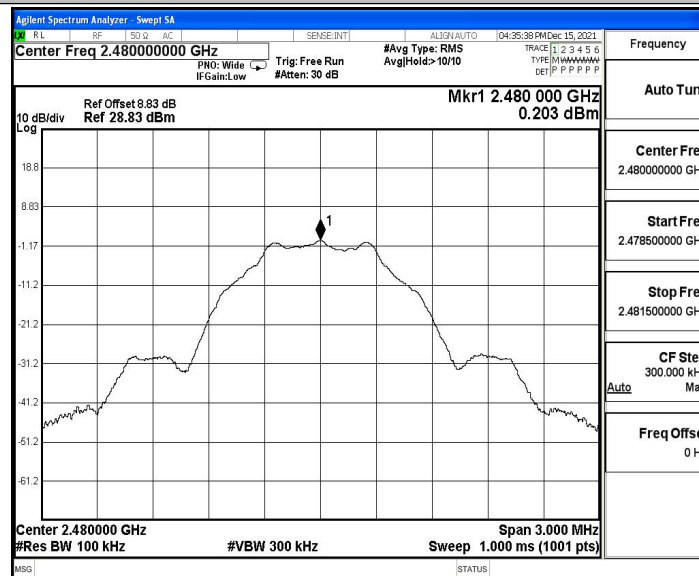




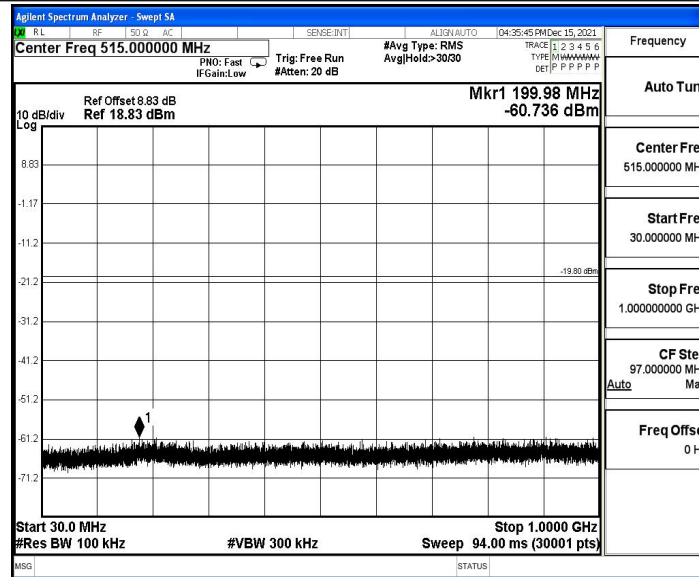
BLE_1M_Ant1_2440_1000~26500



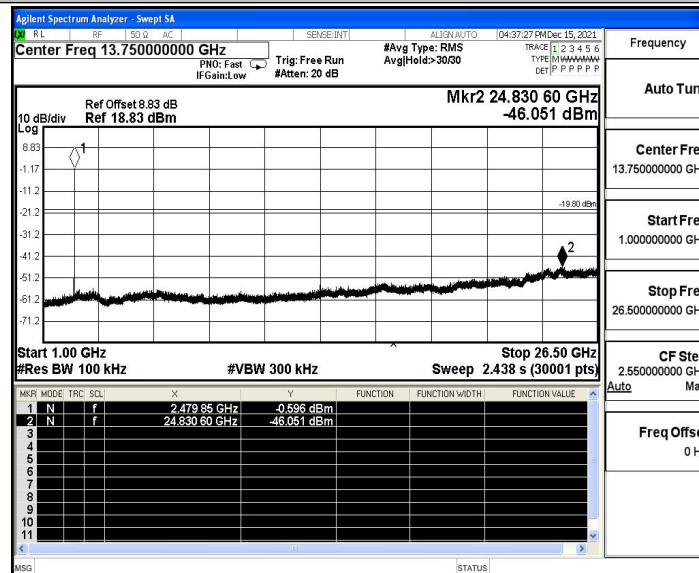
BLE_1M_Ant1_2480_0~Reference



BLE_1M_Ant1_2480_30~1000



BLE_1M_Ant1_2480_1000~26500





A.6 Duty Cycle

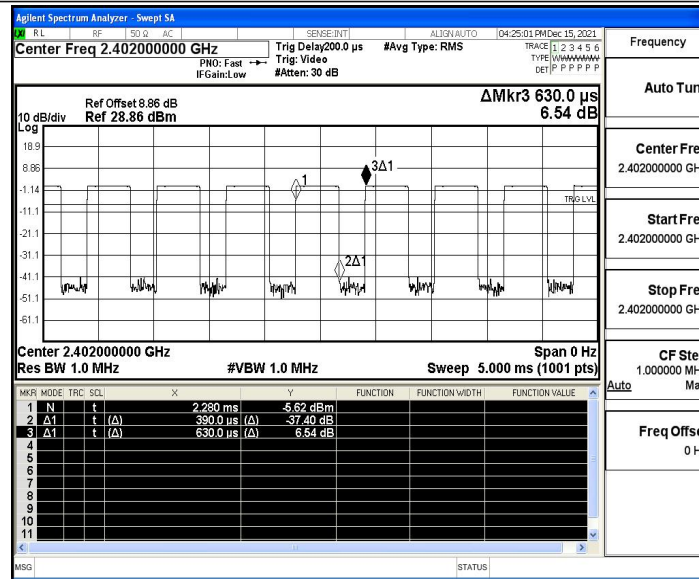
Test Result

TestMode	Antenna	Channel	ON Time [ms]	Period [ms]	X	DC [%]	xFactor	Limit	Verdict
BLE_1M	Ant1	2402	0.39	0.63	0.6190	61.90	2.08	---	PASS
		2440	0.39	0.63	0.6190	61.90	2.08	---	PASS
		2480	0.38	0.62	0.6129	61.29	2.13	---	PASS

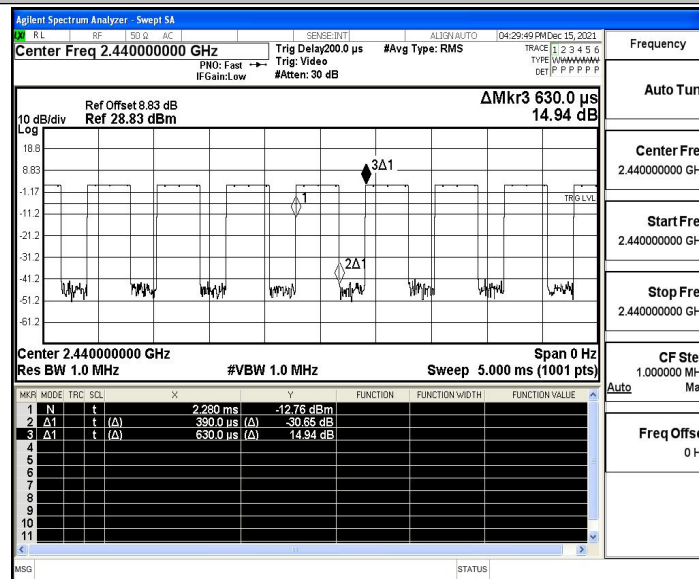


Test Graphs

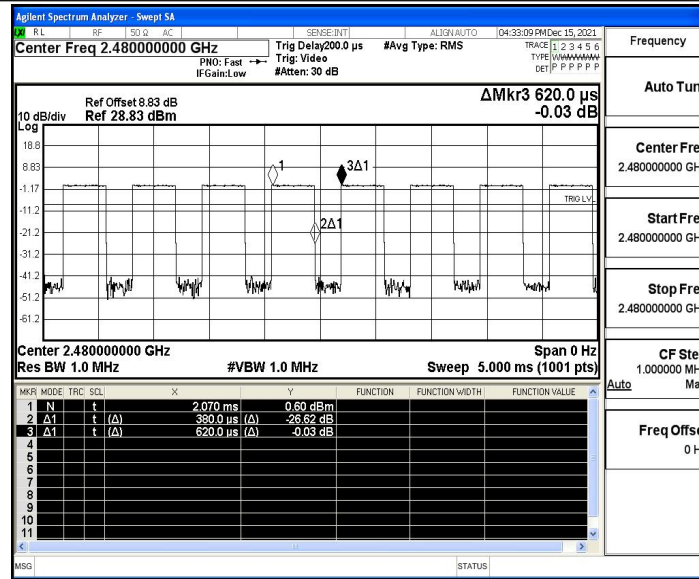
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480





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	-47.09	≤-41.20	48.11	≤54	PASS
				AV	2378.750	-46.48	≤-41.20	48.72	≤54	PASS
				AV	2390.000	-46.83	≤-41.20	48.37	≤54	PASS
				Peak	2310.000	-38.3	≤-21.20	56.90	≤74	PASS
				Peak	2313.965	-36.72	≤-21.20	58.48	≤74	PASS
				Peak	2390.000	-38.65	≤-21.20	56.55	≤74	PASS
		High	2480	AV	2483.500	-45.7	≤-41.20	49.50	≤54	PASS
				AV	2484.080	-46.02	≤-41.20	49.18	≤54	PASS
				AV	2500.000	-46.11	≤-41.20	49.09	≤54	PASS
				Peak	2483.500	-35.73	≤-21.20	59.47	≤74	PASS
				Peak	2493.200	-35.42	≤-21.20	59.78	≤74	PASS
				Peak	2500.000	-38.19	≤-21.20	57.01	≤74	PASS

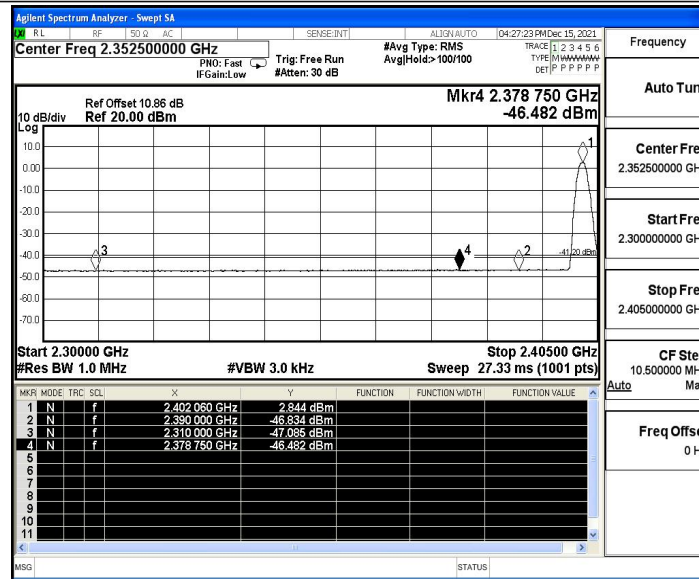
Note:

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.

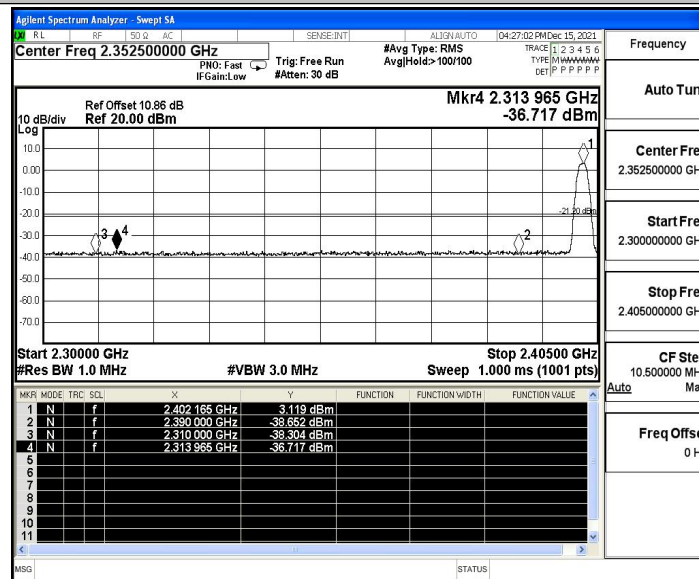


Test Graphs

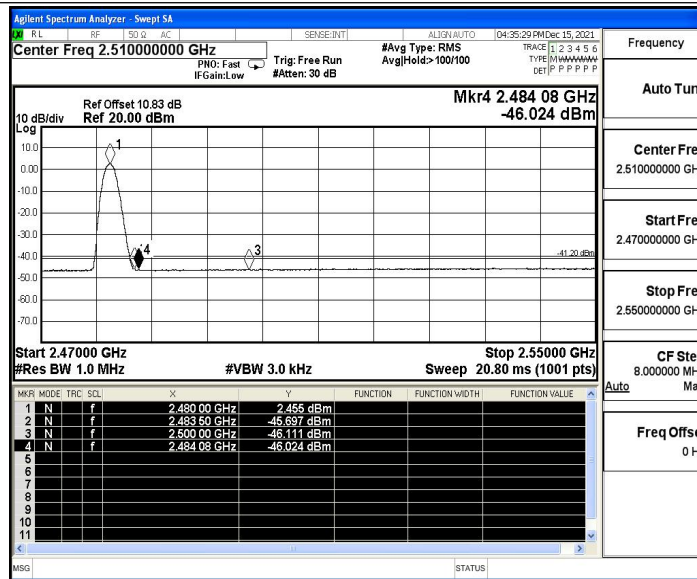
BLE_1M_Ant1_Low_2402_AV



BLE_1M_Ant1_Low_2402_Peak



BLE_1M_Ant1_High_2480_AV



BLE_1M_Ant1_High_2480_Peak

