



Appendix B

RF Test Data for BT LE V4.0(DTS) (Conducted Measurement)

Product Name: HyBook

Trade Mark: HYUNDAI

Test Model: HT14CCIC44SG

Environmental Conditions

Temperature:	21.1℃
Relative Humidity:	52.2%
ATM Pressure:	100.0 kPa
Test Engineer:	Jay Li
Supervised by:	Li Huan



Appendix B.1: DTS Bandwidth

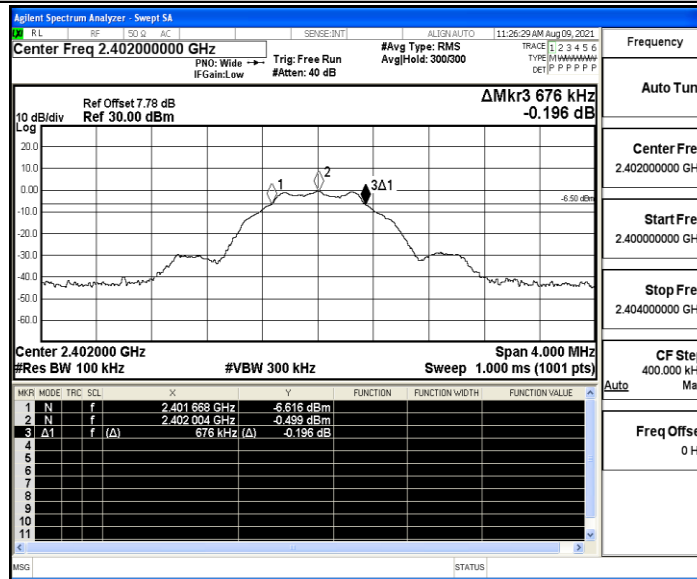
Test Result

TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.676	2401.668	2402.344	≥ 0.5	PASS
		2440	0.684	2439.660	2440.344	≥ 0.5	PASS
		2480	0.660	2479.676	2480.336	≥ 0.5	PASS

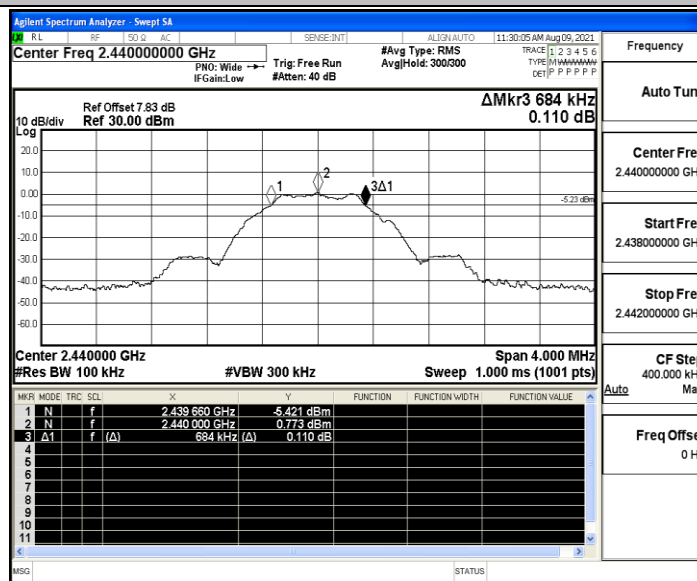


Test Graphs

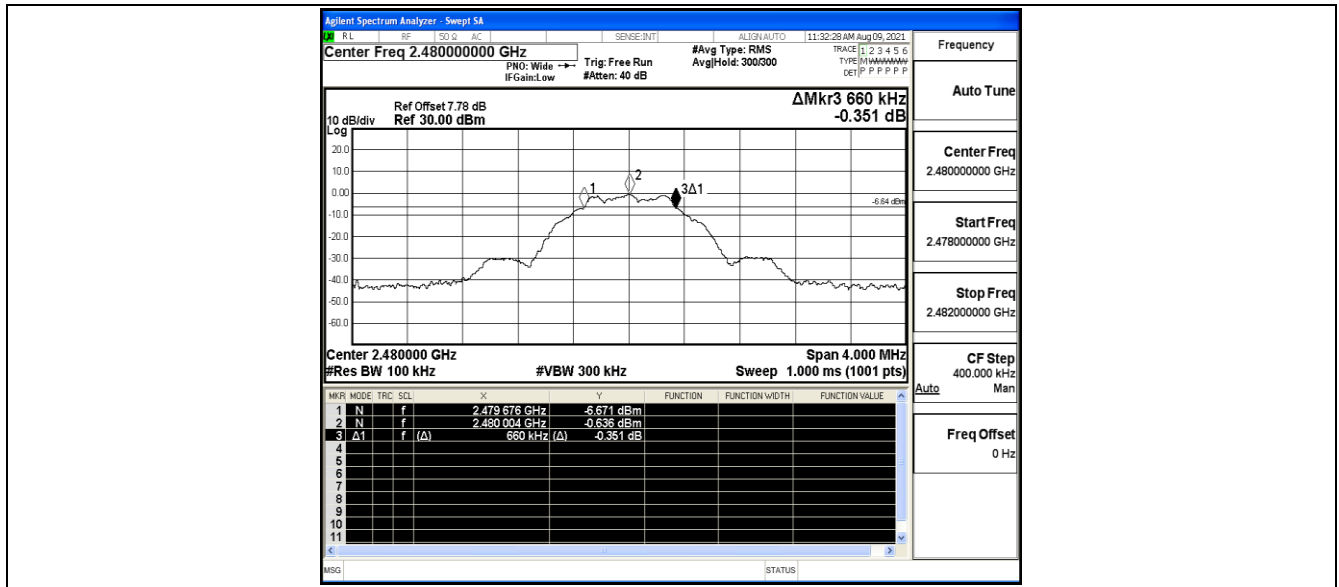
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480





Appendix B.2: Maximum peak conducted output power

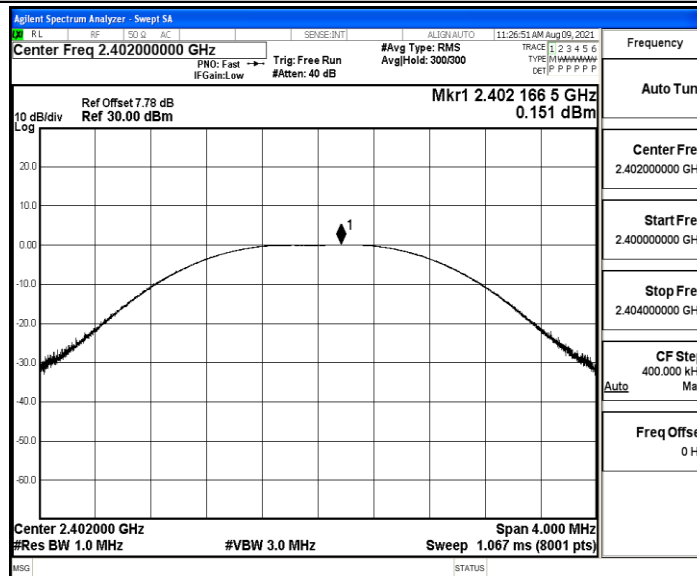
Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	0.15	≤ 30	PASS
		2440	1.36	≤ 30	PASS
		2480	-0.03	≤ 30	PASS

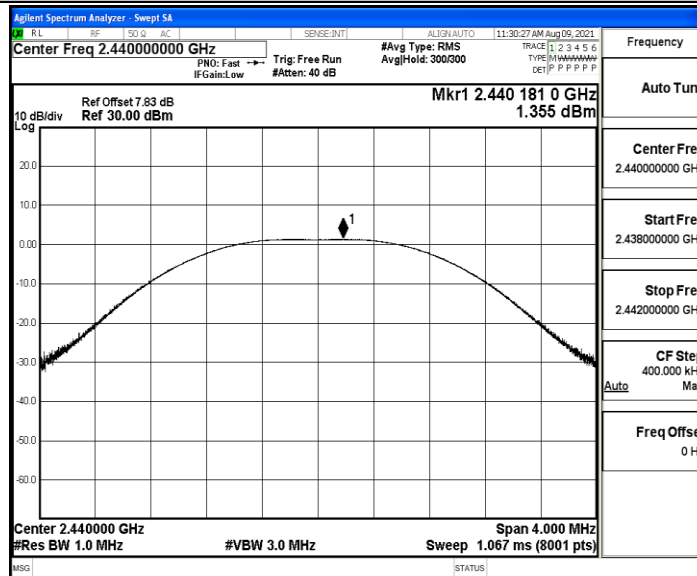


Test Graphs

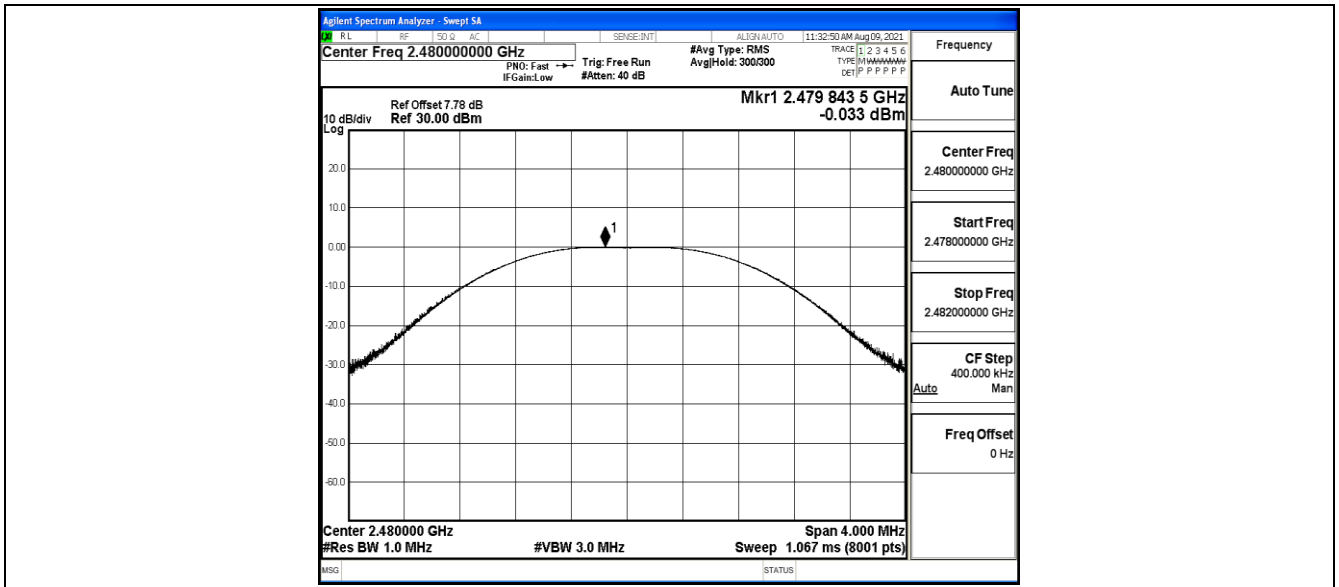
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480





Appendix B.3: Maximum power spectral density

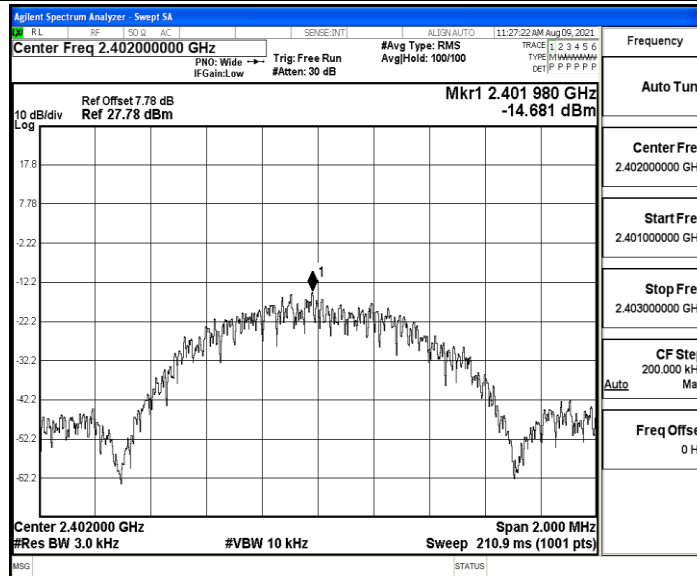
Test Result

TestMode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-14.68	≤ 8	PASS
		2440	-13.55	≤ 8	PASS
		2480	-14.88	≤ 8	PASS

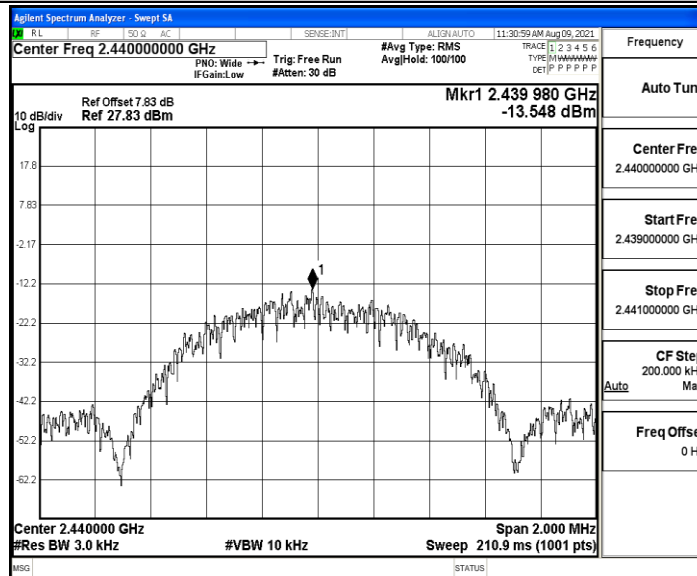


Test Graphs

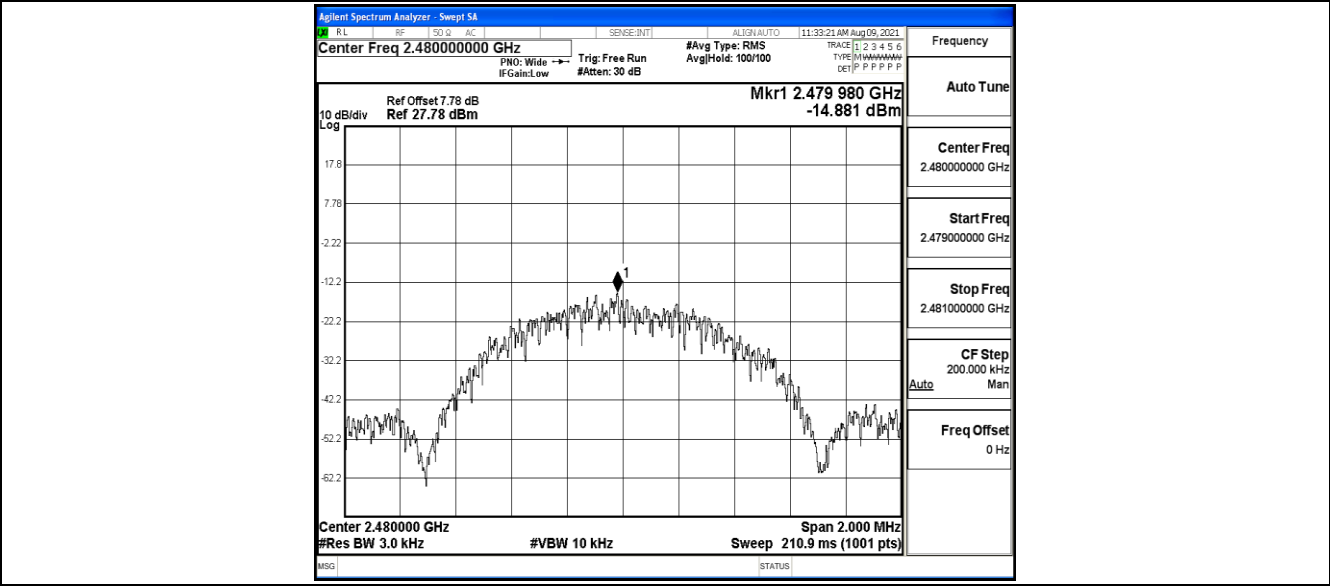
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480





Appendix B.4: Band edge measurements

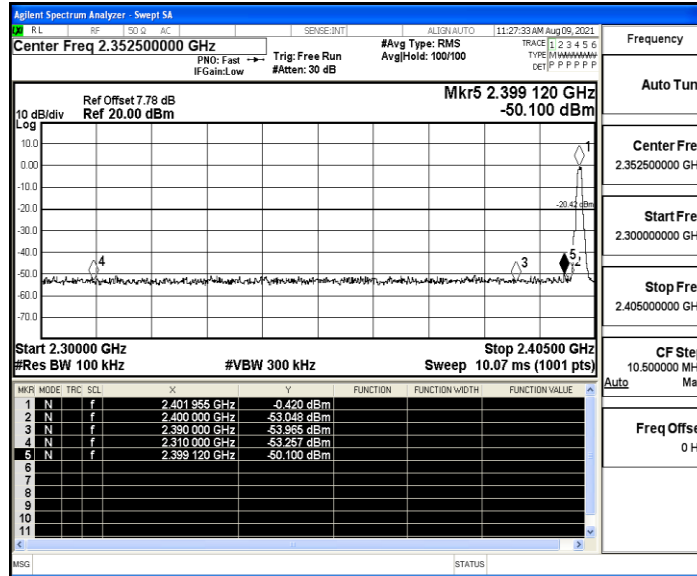
Test Result

TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	-0.42	-50.1	≤ -20.42	PASS
		High	2480	-0.88	-49.31	≤ -20.88	PASS

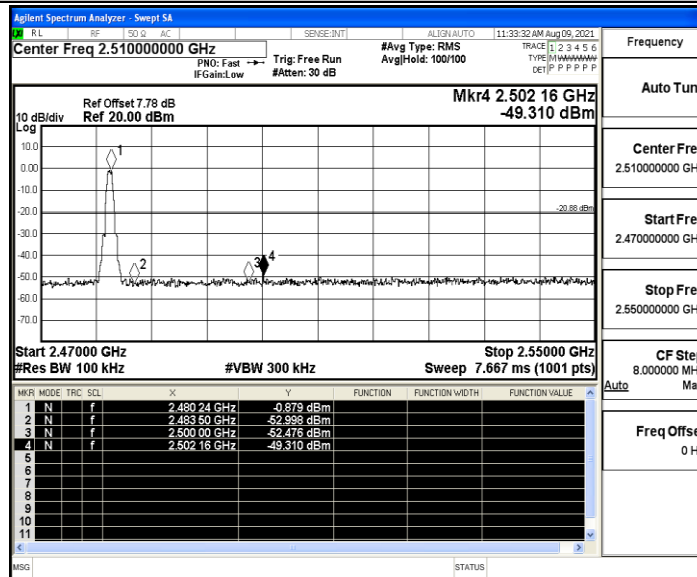


Test Graphs

BLE_1M_Ant1_Low_2402



BLE_1M_Ant1_High_2480





Appendix B.5: Conducted Spurious Emission

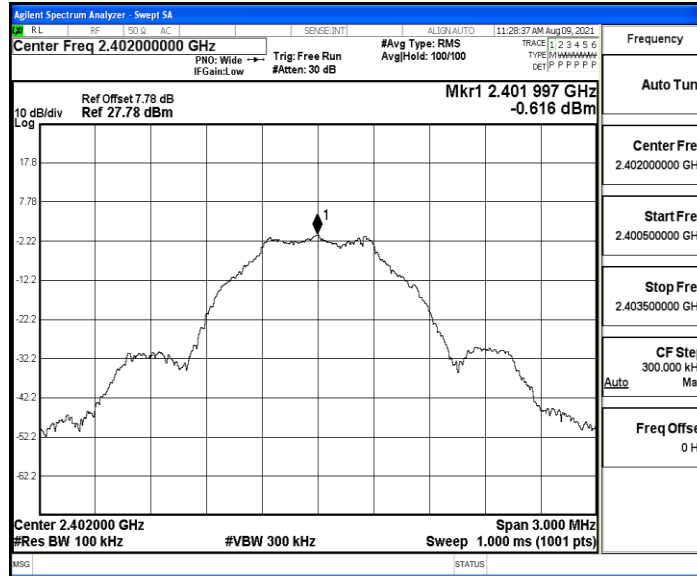
Test Result

TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	-0.62	-0.62	---	PASS
			30~1000	-0.62	-61.77	≤ -20.62	PASS
			1000~26500	-0.62	-47.65	≤ -20.62	PASS
		2440	Reference	0.56	0.56	---	PASS
			30~1000	0.56	-60.75	≤ -19.44	PASS
			1000~26500	0.56	-47.4	≤ -19.44	PASS
		2480	Reference	-0.80	-0.80	---	PASS
			30~1000	-0.80	-61.88	≤ -20.8	PASS
			1000~26500	-0.80	-47.68	≤ -20.8	PASS

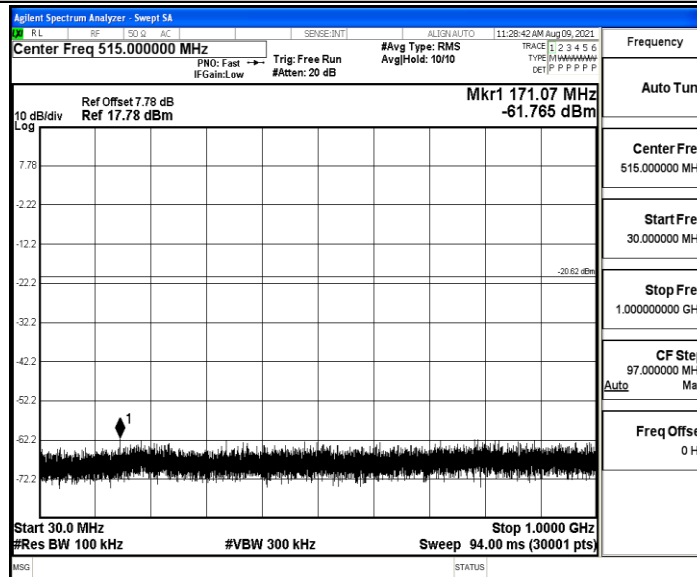


Test Graphs

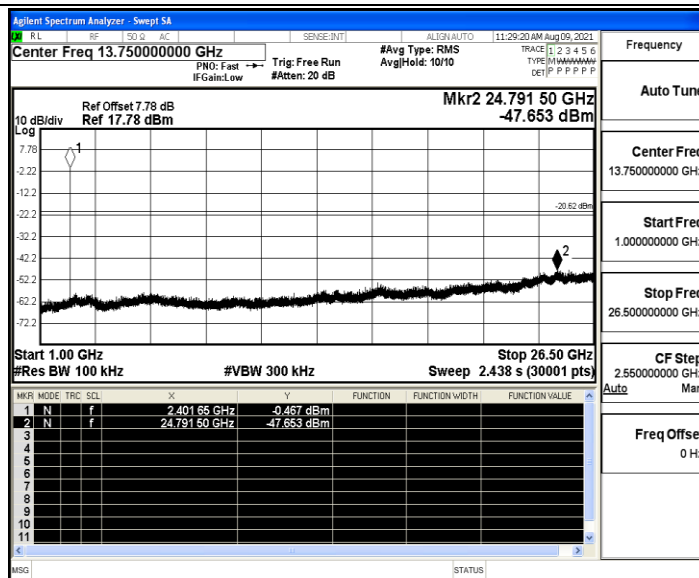
BLE_1M_Ant1_2402_0~Reference



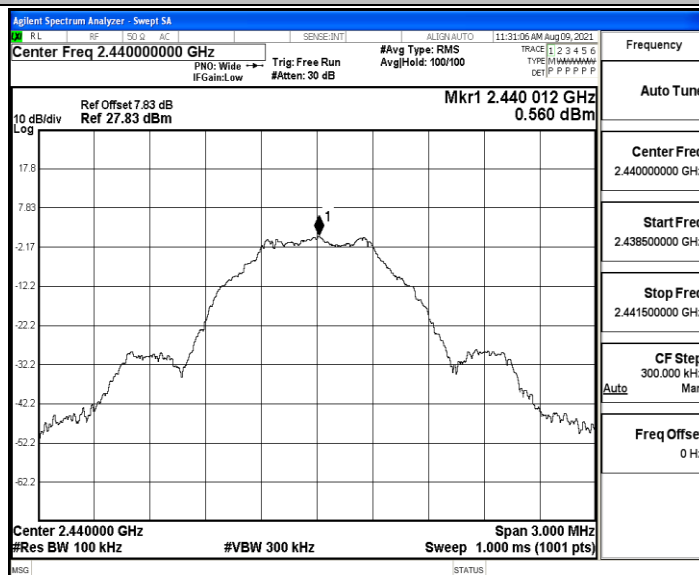
BLE_1M_Ant1_2402_30~1000



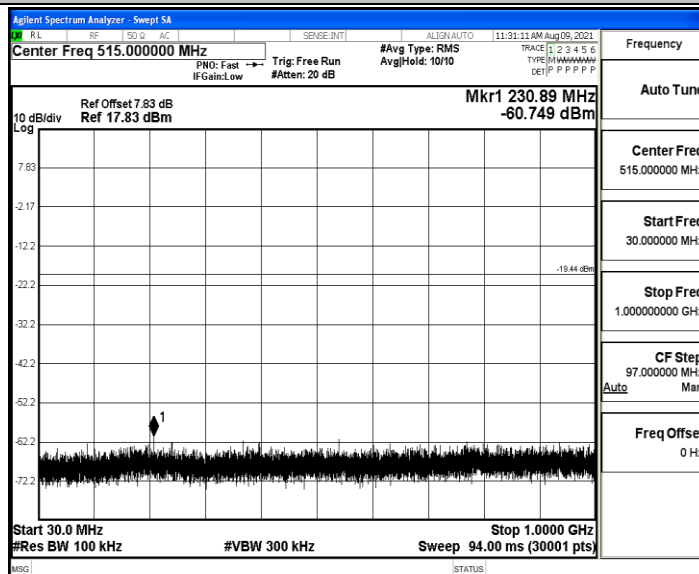
BLE_1M_Ant1_2402_1000~26500



BLE_1M_Ant1_2440_0~Reference

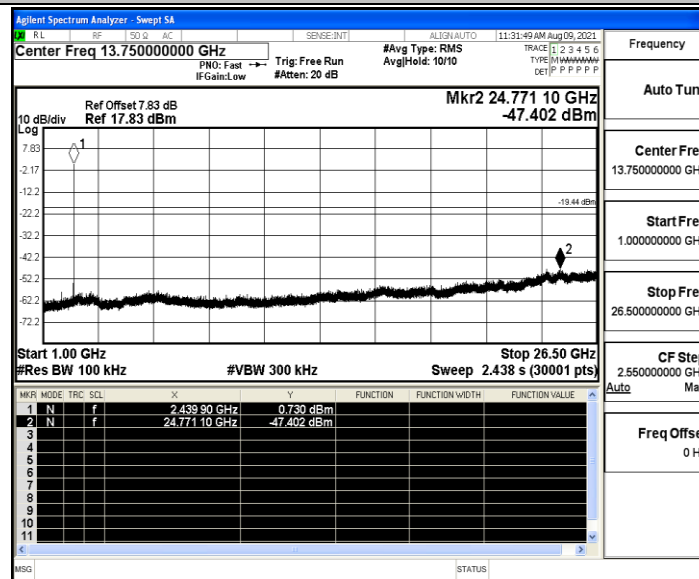


BLE_1M_Ant1_2440_30~1000

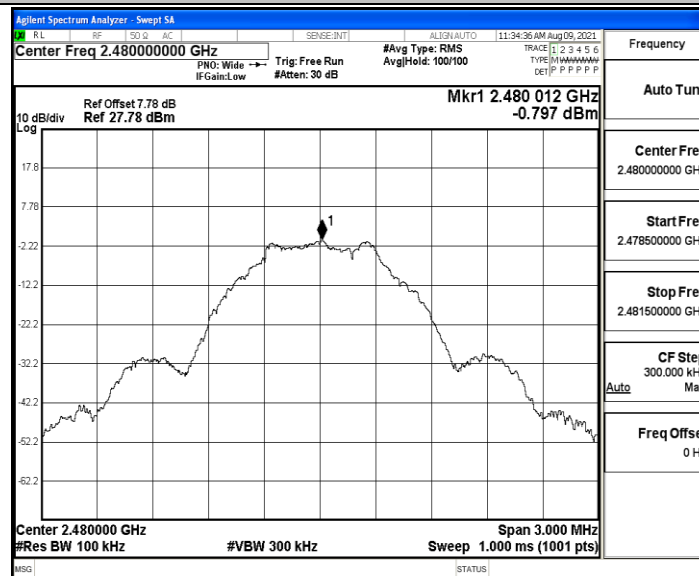




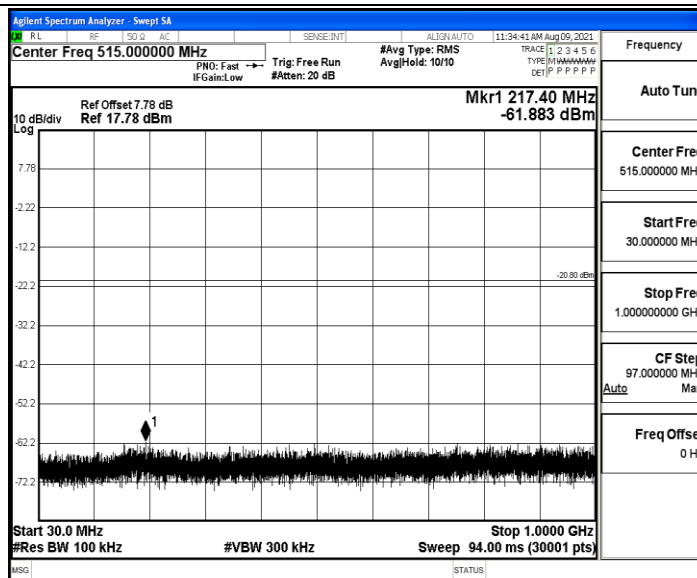
BLE_1M_Ant1_2440_1000~26500



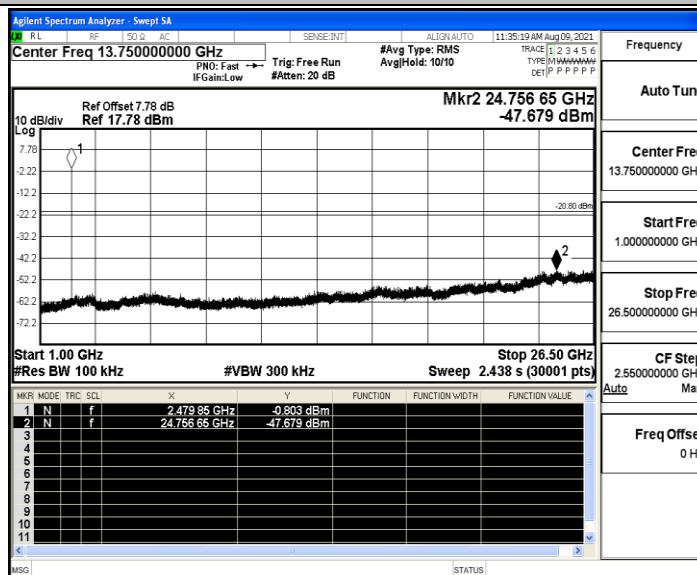
BLE_1M_Ant1_2480_0~Reference



BLE_1M_Ant1_2480_30~1000



BLE_1M_Ant1_2480_1000~26500





Appendix B.6: Duty Cycle

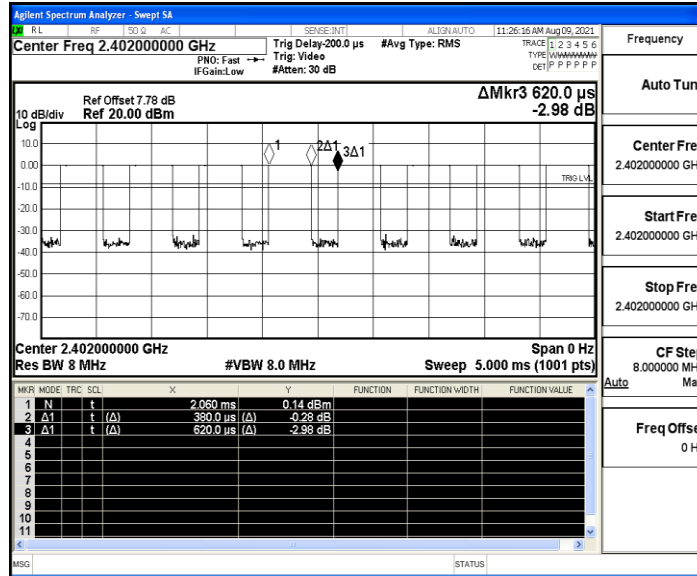
Test Result

TestMode	Antenna	Channel	ON Time [ms]	Period [ms]	X	DC [%]	10lg (1/DC)	Limit	Verdict
BLE_1M	Ant1	2402	0.38	0.62	0.6129	61.29	2.13	---	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

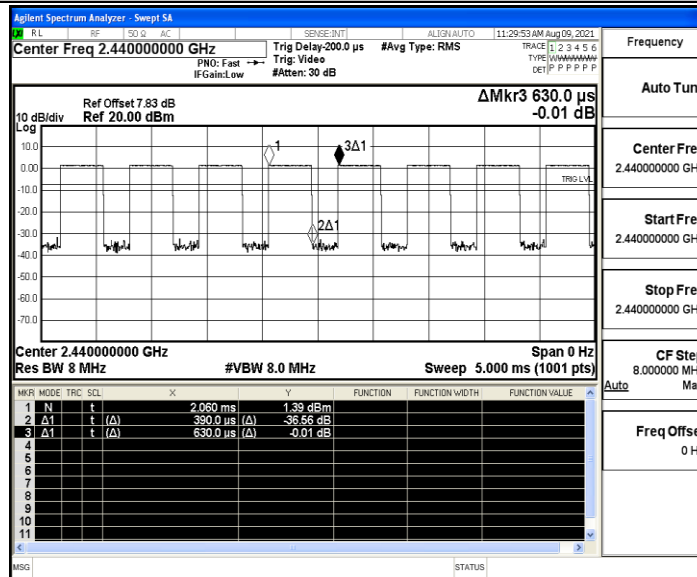


Test Graphs

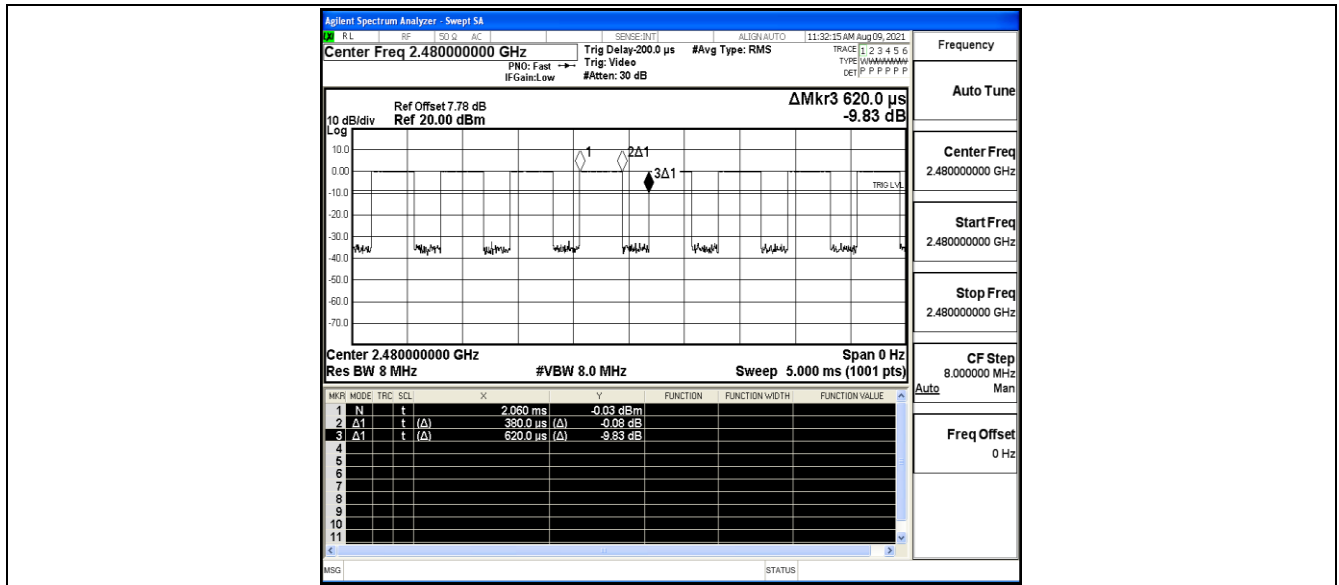
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480





Appendix B.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	-48.39	≤-41.20	46.81	≤54	PASS
				AV	2355.020	-47.6	≤-41.20	47.60	≤54	PASS
				AV	2390.000	-47.65	≤-41.20	47.55	≤54	PASS
				Peak	2310.000	-40.97	≤-21.20	54.23	≤74	PASS
				Peak	2371.190	-37.65	≤-21.20	57.55	≤74	PASS
				Peak	2390.000	-42.44	≤-21.20	52.76	≤74	PASS
		High	2480	AV	2483.500	-47.26	≤-41.20	47.94	≤54	PASS
				AV	2495.200	-47.18	≤-41.20	48.02	≤54	PASS
				AV	2500.000	-47.35	≤-41.20	47.85	≤54	PASS
				Peak	2483.500	-40.4	≤-21.20	54.80	≤74	PASS
				Peak	2497.200	-38.78	≤-21.20	56.42	≤74	PASS
				Peak	2500.000	-42.05	≤-21.20	53.15	≤74	PASS

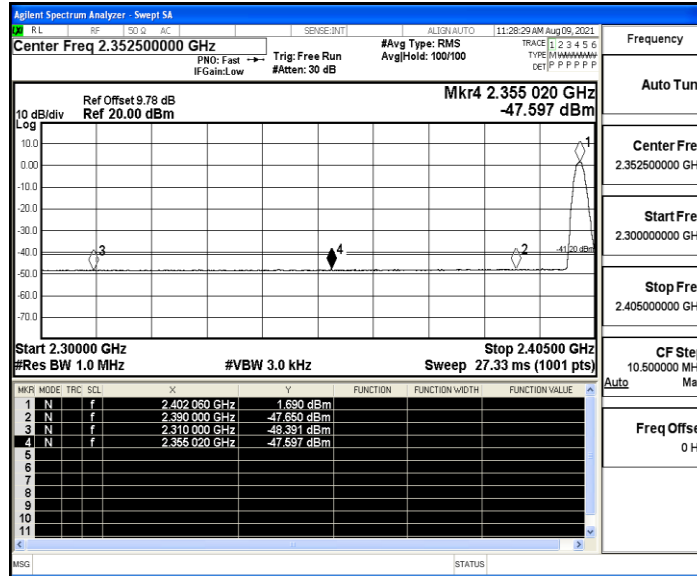
Note:

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.

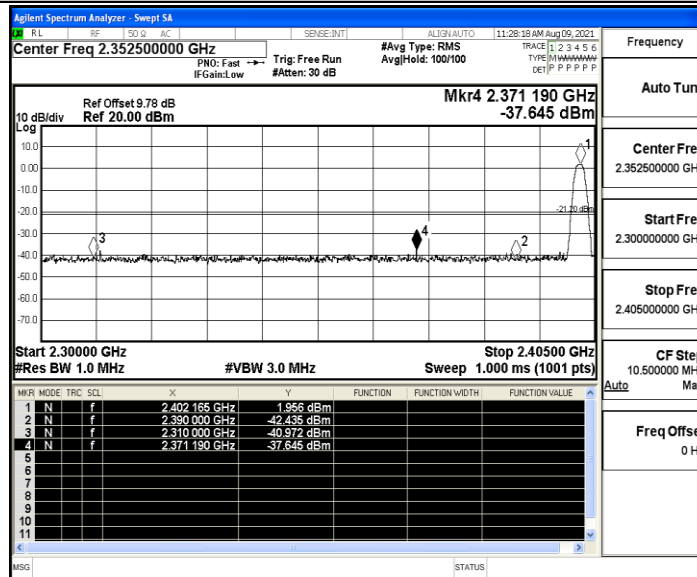


Test Graphs

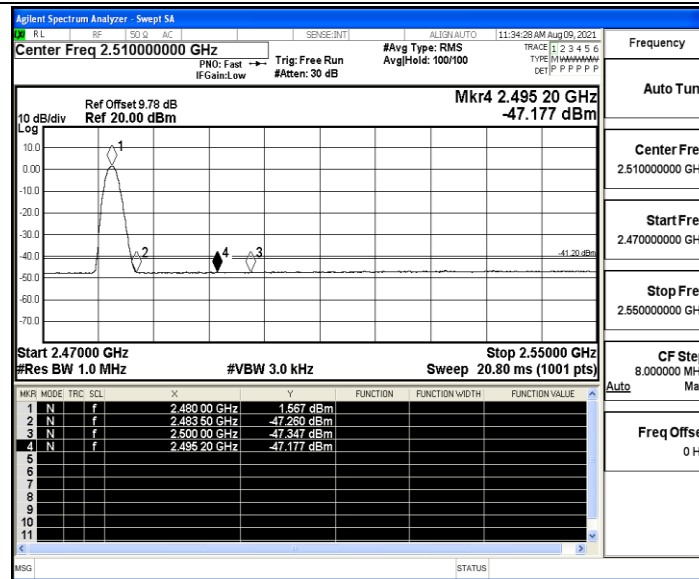
BLE_1M_Ant1_Low_2402_AV



BLE_1M_Ant1_Low_2402_Peak



BLE_1M_Ant1_High_2480_AV



BLE_1M_Ant1_High_2480_Peak

