

Case No. : <u>CTA24072303501</u>	
Ambient Condition: <u>23</u> °C, <u>51</u> %RH	
According Standard: 15.247	
Test Date: <u>2024.7.26</u>	Test Engineer: <u>Lushan Kong</u>

Appendix A.1: DTS Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE	Ant1	2402	0.660	2401.676	2402.336	0.5	PASS
		2440	0.656	2439.664	2440.320	0.5	PASS
		2480	0.724	2479.628	2480.352	0.5	PASS

Test Graphs

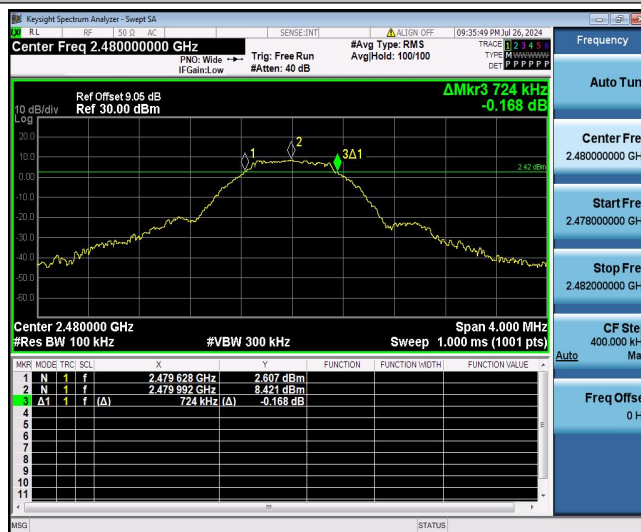
BLE_Ant1_2402



BLE_Ant1_2440



BLE_Ant1_2480



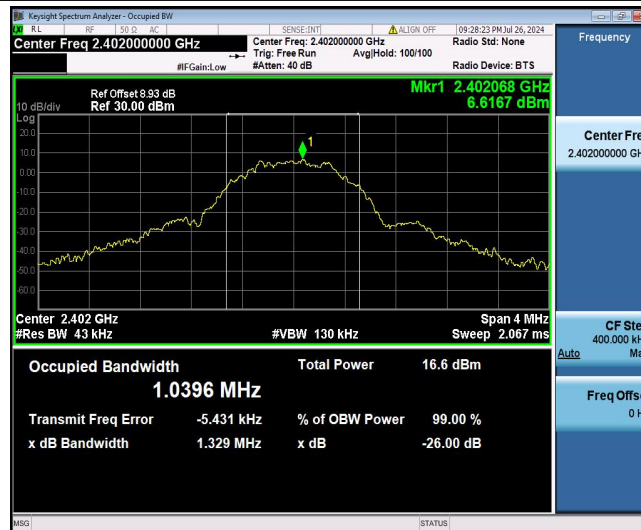
Appendix A.2: Occupied Channel Bandwidth

Test Result

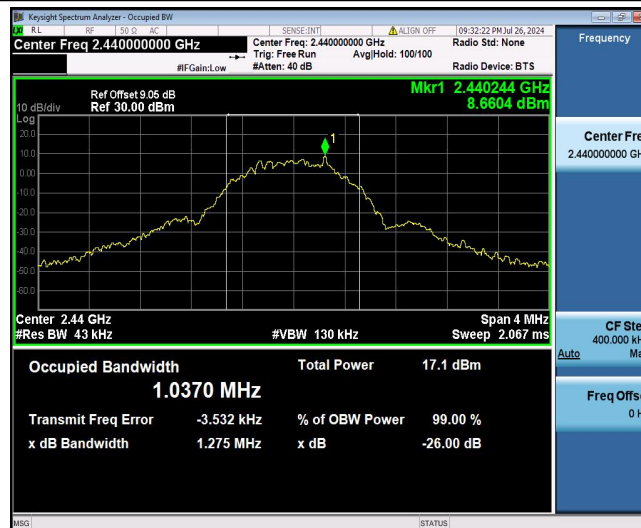
TestMode	Antenna	Freq(MHz)	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE	Ant1	2402	1.0396	2401.4748	2402.5144	---	---
		2440	1.0370	2439.4780	2440.5150	---	---
		2480	1.0308	2479.4750	2480.5058	---	---

Test Graphs

BLE_Ant1_2402



BLE_Ant1_2440



BLE_Ant1_2480



Appendix A.3: Maximum conducted output power

FPC Antenna:

TestMode	Antenna	Freq(MHz)	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Gain[dBm]	EIRP[dBm]	EIRP Limit[dBm]	Verdict
BLE	Ant1	2402	14.93	≤30	4.66	19.59	≤36	PASS
		2440	14.30	≤30	4.66	18.96	≤36	PASS
		2480	14.85	≤30	4.66	19.51	≤36	PASS

Omni Antenna:

TestMode	Antenna	Freq(MHz)	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Gain[dBm]	EIRP[dBm]	EIRP Limit[dBm]	Verdict
BLE	Ant1	2402	14.93	≤30	2.91	17.84	≤36	PASS
		2440	14.30	≤30	2.91	17.21	≤36	PASS
		2480	14.85	≤30	2.91	17.76	≤36	PASS

Appendix A.4: Maximum power spectral density

Test Result

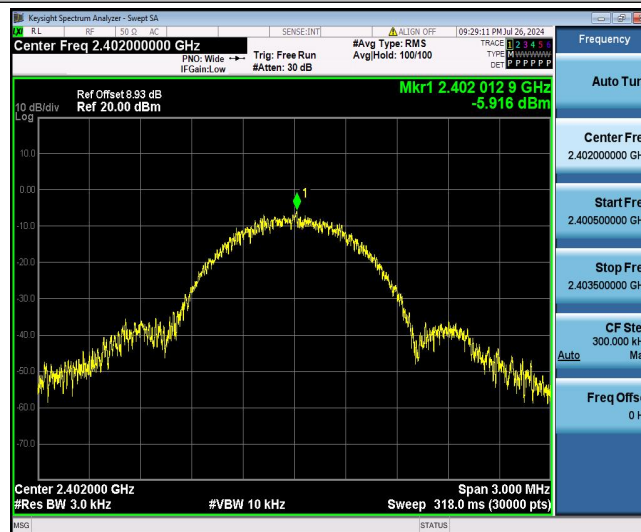
TestMode	Antenna	Freq(MHz)	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE	Ant1	2402	-5.92	≤8.00	PASS
		2440	-5.60	≤8.00	PASS
		2480	-6.15	≤8.00	PASS

Note:

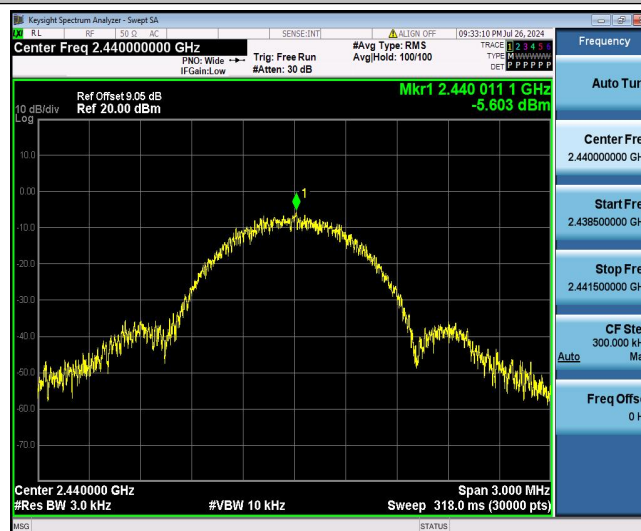
1. The Duty Cycle Factor and RBW Factor is compensated in the graph.

Test Graphs

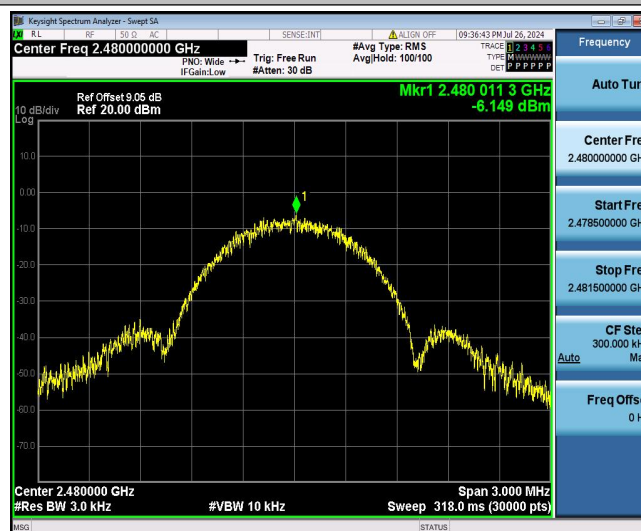
BLE_Ant1_2402



BLE_Ant1_2440



BLE_Ant1_2480

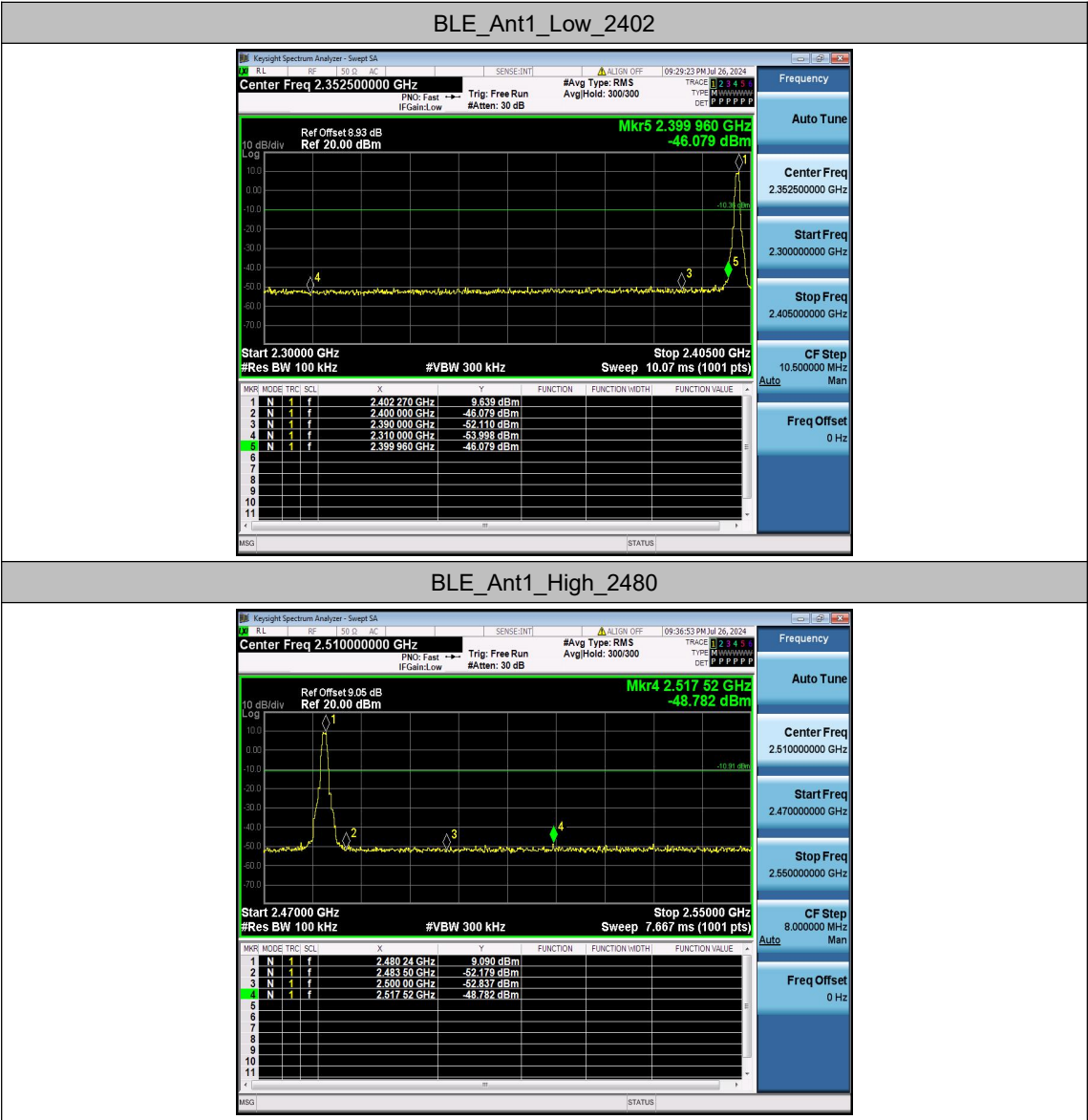


Appendix A.5: Band edge measurements

Test Result

TestMode	Antenna	ChName	Freq(MHz)	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE	Ant1	Low	2402	9.64	-46.08	≤-10.36	PASS
		High	2480	9.09	-48.78	≤-10.91	PASS

Test Graphs



Appendix A.6: Conducted Spurious Emission

Test Result

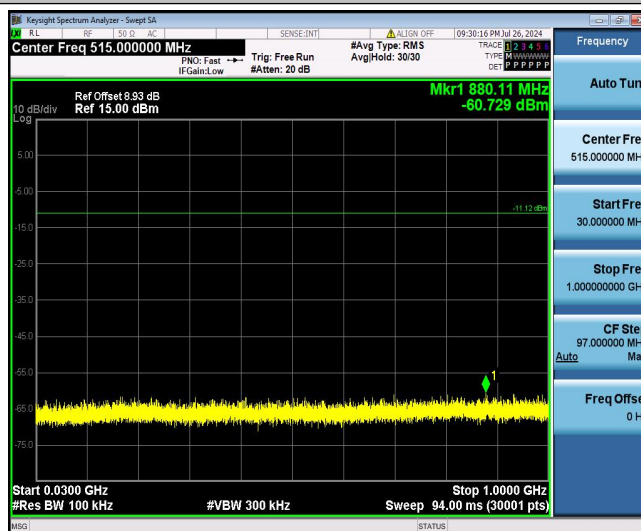
TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE	Ant1	2402	Reference	8.88	8.88	---	PASS
			30~1000	8.88	-60.73	≤ -11.12	PASS
			1000~26500	8.88	-37.29	≤ -11.12	PASS
		2440	Reference	9.09	9.09	---	PASS
			30~1000	9.09	-60.28	≤ -10.91	PASS
			1000~26500	9.09	-38.16	≤ -10.91	PASS
		2480	Reference	9.24	9.24	---	PASS
			30~1000	9.24	-60.56	≤ -10.76	PASS
			1000~26500	9.24	-39.94	≤ -10.76	PASS

Test Graphs

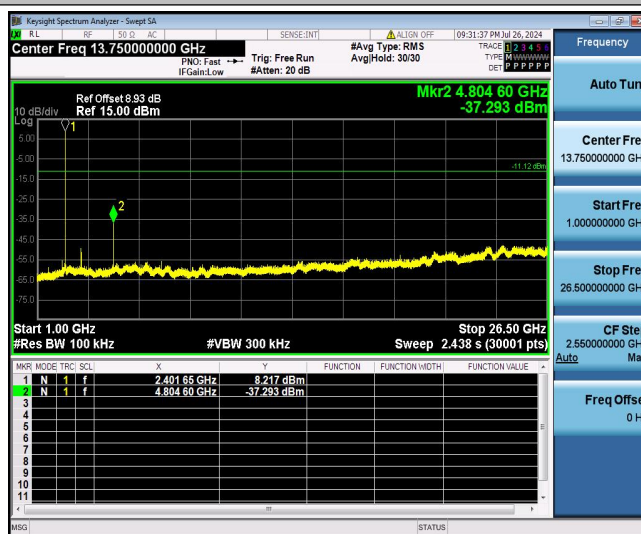
BLE_Ant1_2402_0~Reference



BLE_Ant1_2402_30~1000



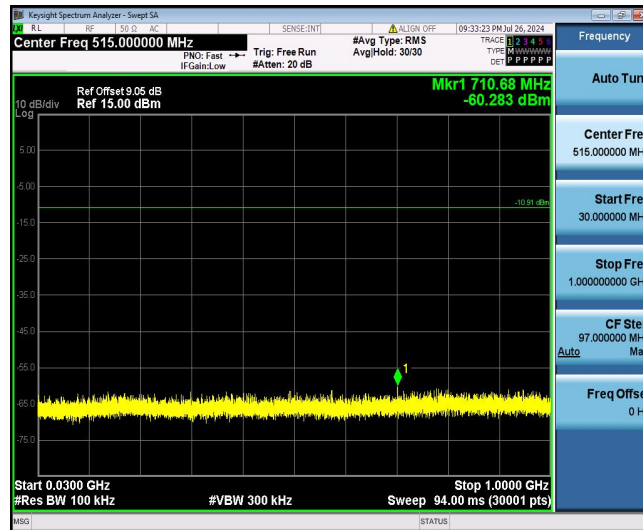
BLE_Ant1_2402_1000~26500



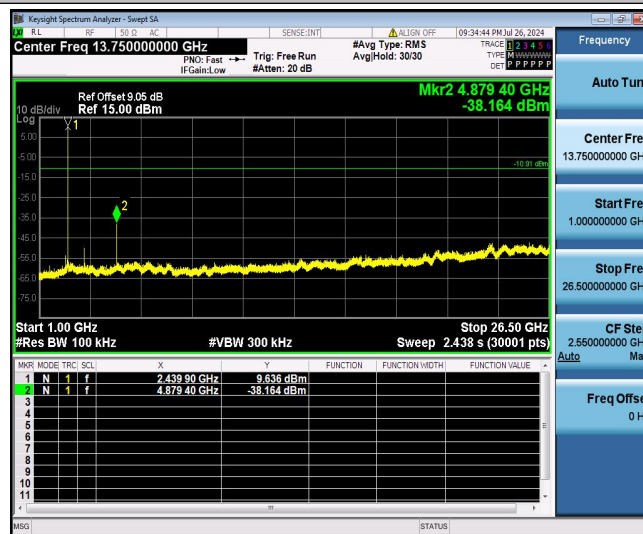
BLE_Ant1_2440_0~Reference



BLE_Ant1_2440_30~1000



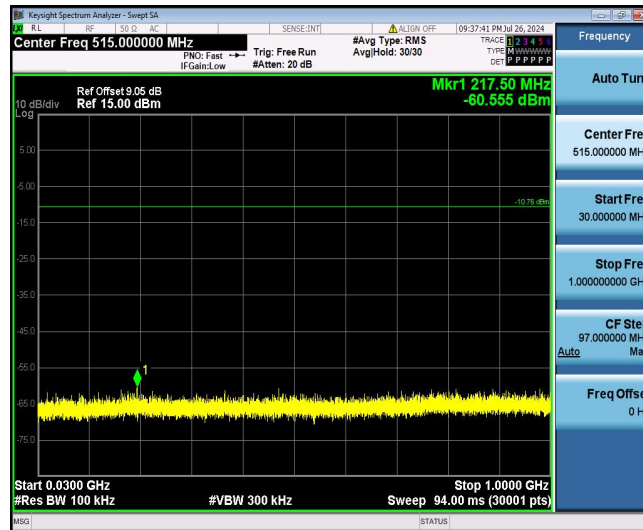
BLE_Ant1_2440_1000~26500



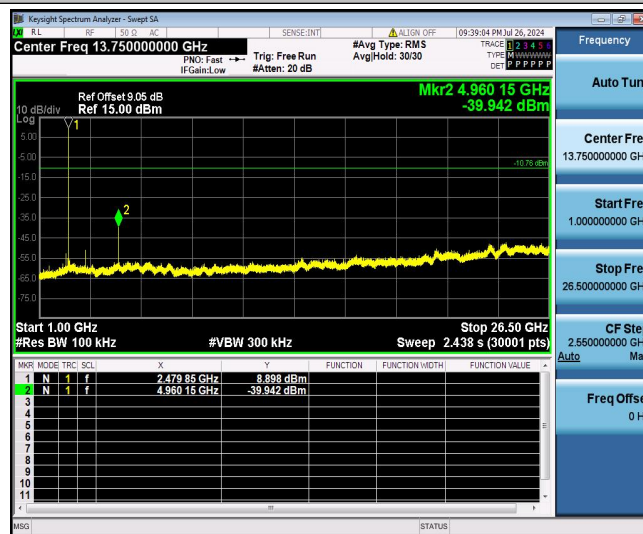
BLE_Ant1_2480_0~Reference



BLE_Ant1_2480_30~1000



BLE_Ant1_2480_1000~26500



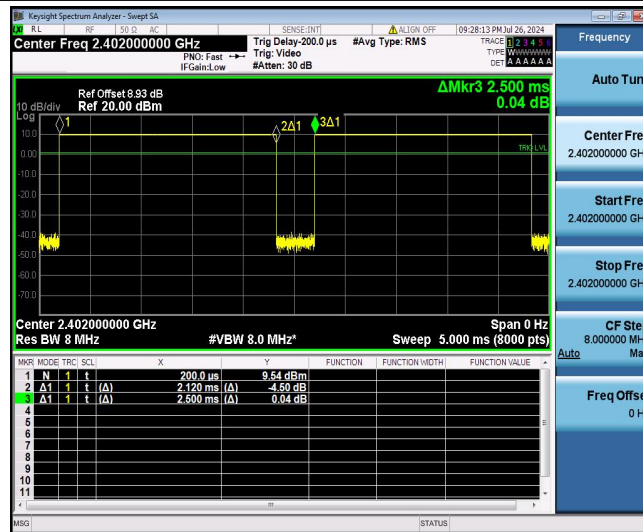
Appendix A.7: Duty Cycle

Test Result

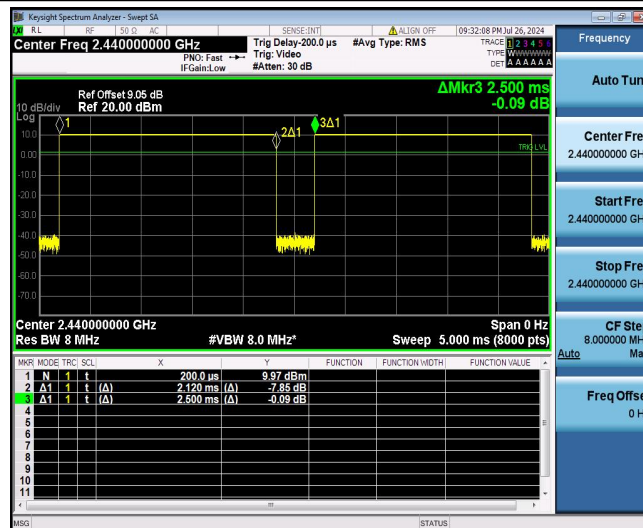
TestMode	Antenna	Freq(MHz)	ON Time [ms]	Period [ms]	X	DC [%]	Duty Cycle Factor[dB]	1/T Factor[KHz]
BLE	Ant1	2402	2.12	2.50	0.8480	84.80	0.72	0.47
		2440	2.12	2.50	0.8480	84.80	0.72	0.47
		2480	2.12	2.50	0.8480	84.80	0.72	0.47

Test Graphs

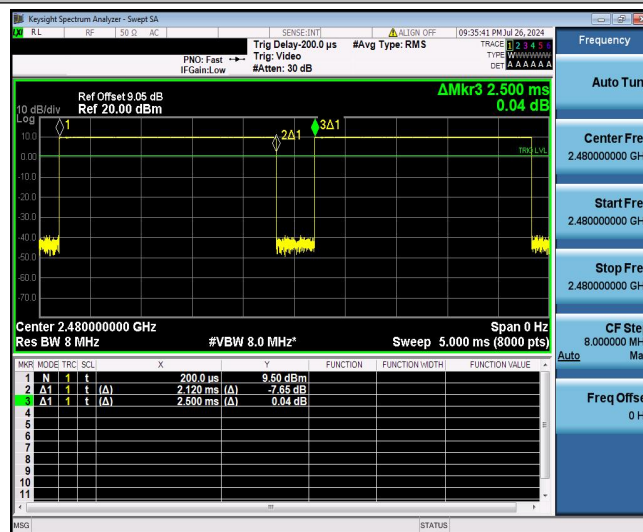
BLE_Ant1_2402



BLE_Ant1_2440



BLE_Ant1_2480



Appendix A.8: Emissions in Restricted Bands

Test Result

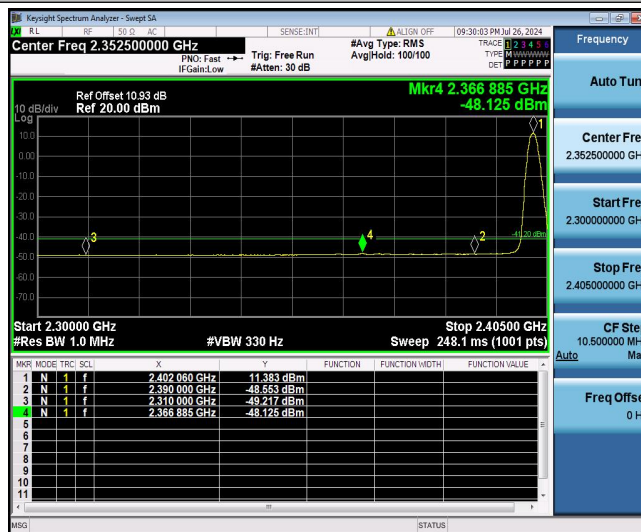
TestMode	Antenna	ChName	Freq(MHz)	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
BLE	Ant1	Low	2402	AV	2310.000	-49.22	≤-41.20	45.98	≤54	PASS
				AV	2366.885	-48.13	≤-41.20	47.07	≤54	PASS
				AV	2390.000	-48.55	≤-41.20	46.65	≤54	PASS
				Peak	2310.000	-41.78	≤-21.20	53.42	≤74	PASS
				Peak	2365.835	-38.97	≤-21.20	56.23	≤74	PASS
				Peak	2390.000	-42.36	≤-21.20	52.84	≤74	PASS
		High	2480	AV	2483.500	-44.48	≤-41.20	50.72	≤54	PASS
				AV	2483.520	-44.48	≤-41.20	50.72	≤54	PASS
				AV	2500.000	-48.33	≤-41.20	46.87	≤54	PASS
				Peak	2483.500	-38.33	≤-21.20	56.87	≤74	PASS
				Peak	2487.920	-38.14	≤-21.20	57.06	≤74	PASS
				Peak	2500.000	-40.21	≤-21.20	54.99	≤74	PASS

Note:

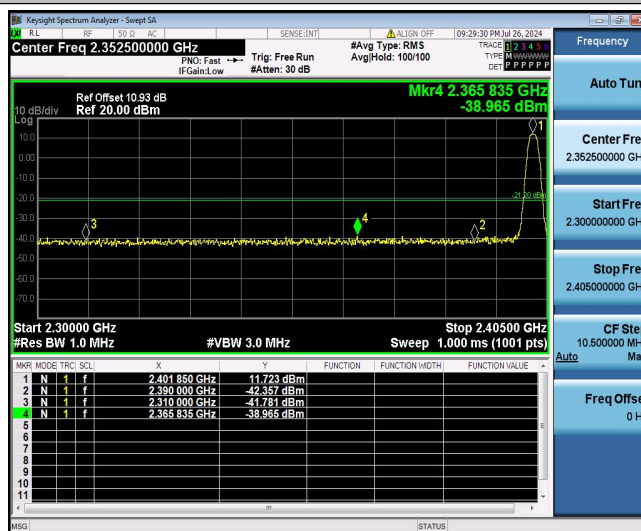
1. The Antenna Gain is compensated in the graph.
2. The Duty Cycle Factor and RBW Factor is compensated in the graph.
3. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

Test Graphs

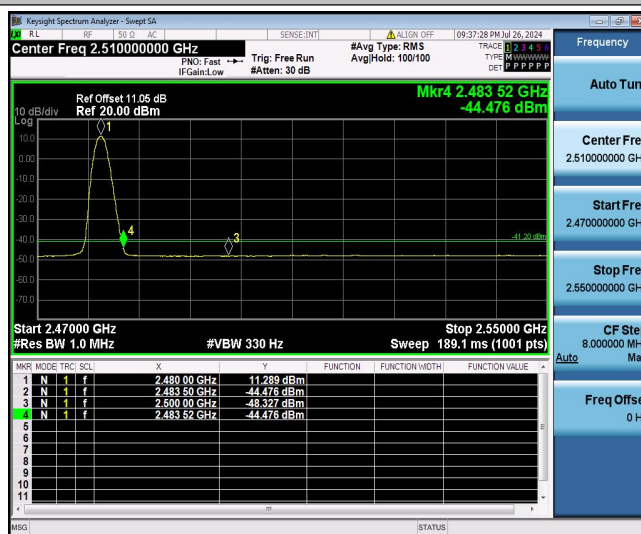
BLE_Ant1_Low_2402_AV



BLE_Ant1_Low_2402_Peak



BLE_Ant1_High_2480_AV



BLE_Ant1_High_2480_Peak

