

Case No. : <u>GTS20231020001-1-82</u>
Ambient Condition: <u>24 °C, 48 %RH</u>
According Standard: <u>■Part15C</u>
Test Date: <u>2024.1.12</u> Test Engineer: <u>Evan ouyang</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	0.612	2401.692	2402.304	0.5	PASS
		2440	0.556	2439.728	2440.284	0.5	PASS
		2480	0.596	2479.704	2480.300	0.5	PASS

Test Graphs

BLE_Ant1_2402



BLE_Ant1_2440



BLE_Ant1_2480



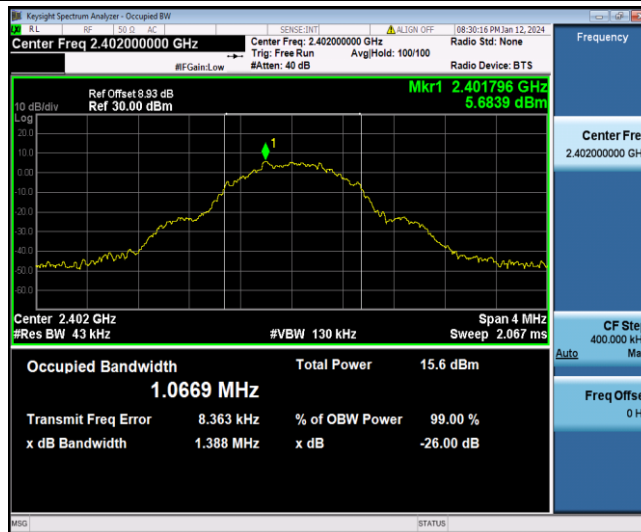
Appendix A.2: Occupied Channel Bandwidth

Test Result

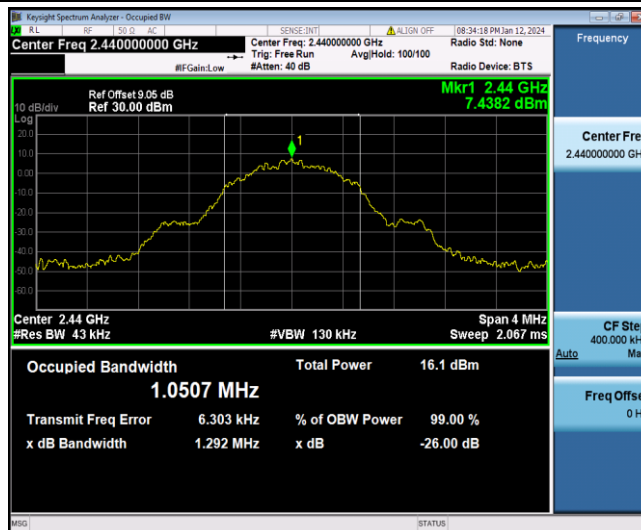
TestMode	Antenna	Freq(MHz)	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE	Ant1	2402	1.0669	2401.4749	2402.5418	---	---
		2440	1.0507	2439.4810	2440.5317	---	---
		2480	1.0522	2479.4816	2480.5338	---	---

Test Graphs

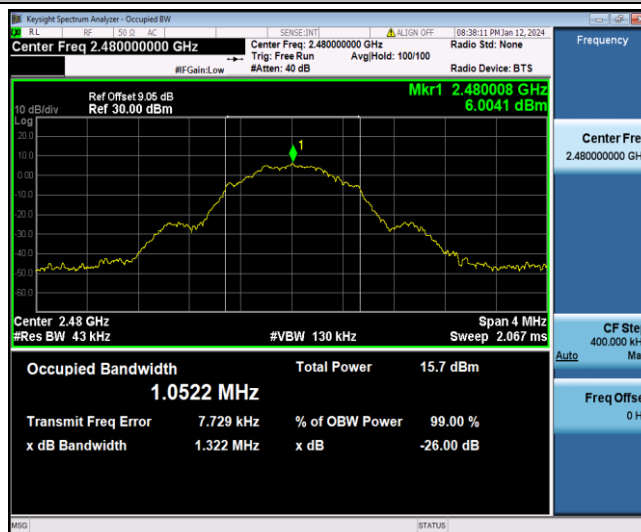
BLE_Ant1_2402



BLE_Ant1_2440



BLE_Ant1_2480



Appendix A.3: Maximum conducted output power

Test Result Peak

Omni Antenna:

TestMode	Antenna	Frequency[MHz]	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
BLE	Ant1	2402	12.59	≤30	PASS
		2440	12.93	≤30	PASS
		2480	12.56	≤30	PASS

FPC Antenna:

TestMode	Antenna	Frequency[MHz]	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
BLE	Ant1	2402	12.59	≤30	PASS
		2440	12.93	≤30	PASS
		2480	12.56	≤30	PASS

Note:

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

Appendix A.4: Maximum power spectral density

Test Result

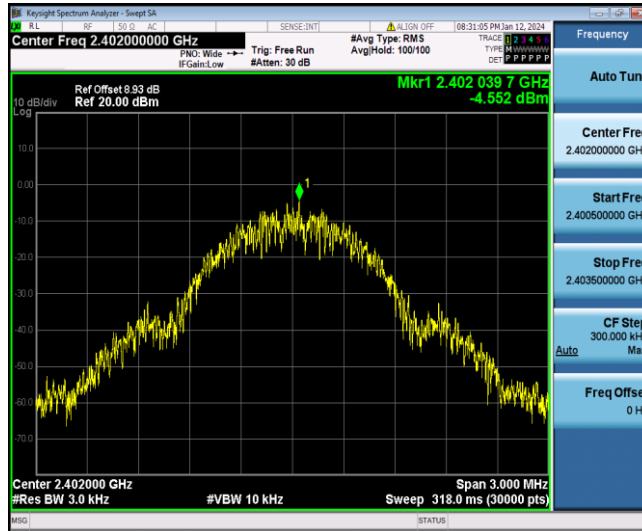
TestMode	Antenna	Freq(MHz)	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE	Ant1	2402	-4.55	≤8.00	PASS
		2440	-4.86	≤8.00	PASS
		2480	-4.92	≤8.00	PASS

Note:

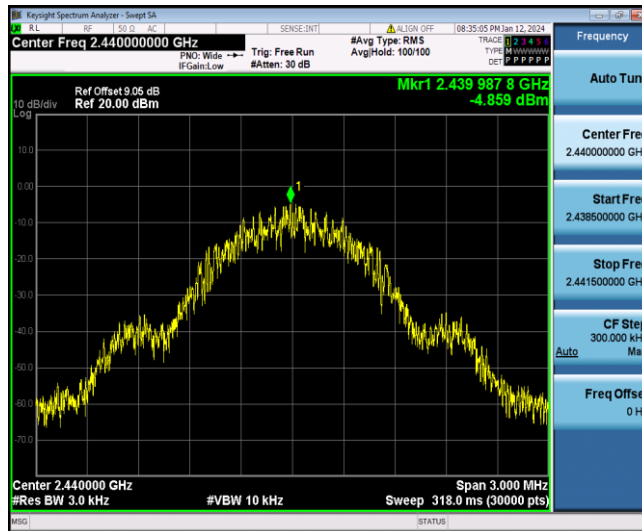
1. The Duty Cycle Factor and RBW Factor is compensated in the graph.

Test Graphs

BLE_Ant1_2402



BLE_Ant1_2440



BLE_Ant1_2480



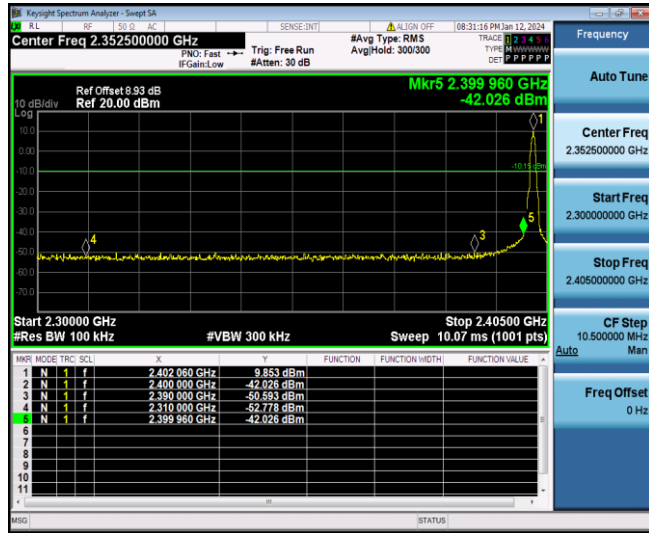
Appendix A.5: Band edge measurements

Test Result

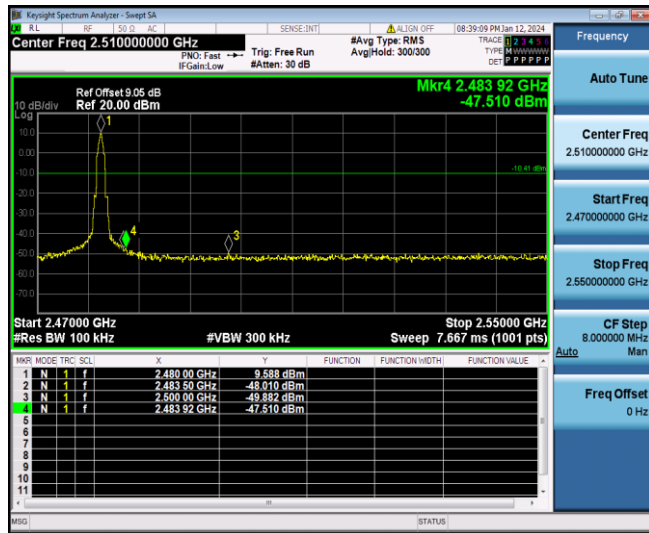
TestMode	Antenna	ChName	Freq(MHz)	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE	Ant1	Low	2402	9.85	-42.03	≤-10.15	PASS
		High	2480	9.59	-47.51	≤-10.41	PASS

Test Graphs

BLE_Ant1_Low_2402



BLE_Ant1_High_2480



Appendix A.6: Conducted Spurious Emission

Test Result

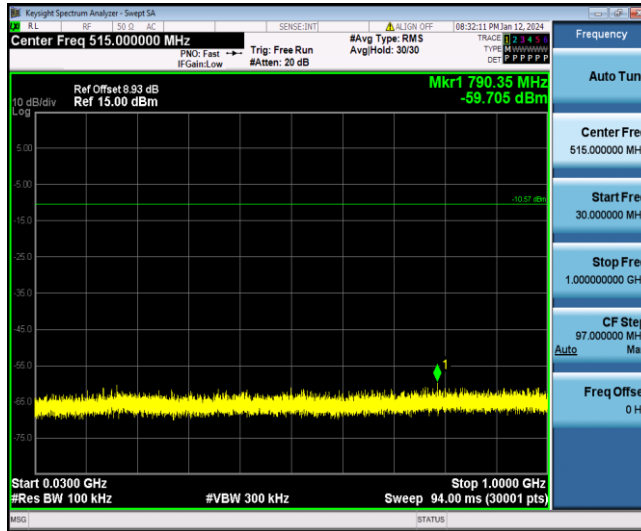
TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE	Ant1	2402	Reference	9.43	9.43	---	PASS
			30~1000	9.43	-59.71	≤-10.57	PASS
			1000~26500	9.43	-38.8	≤-10.57	PASS
		2440	Reference	11.49	11.49	---	PASS
			30~1000	11.49	-60.13	≤-8.51	PASS
			1000~26500	11.49	-47.53	≤-8.51	PASS
		2480	Reference	9.24	9.24	---	PASS
			30~1000	9.24	-60.39	≤-10.76	PASS
			1000~26500	9.24	-48.29	≤-10.76	PASS

Test Graphs

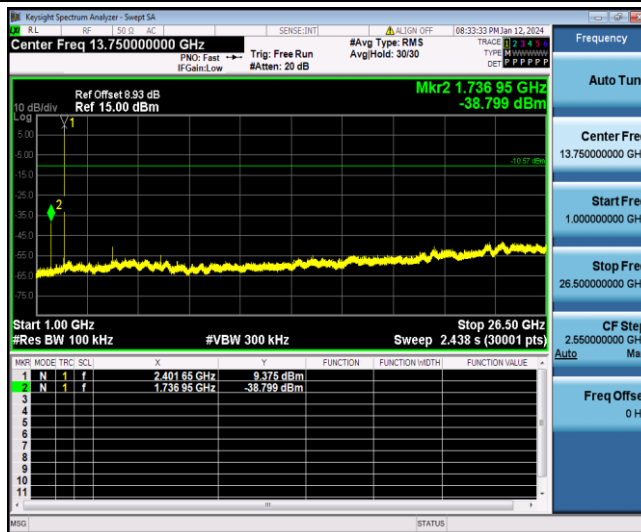
BLE_Ant1_2402_0~Reference



BLE_Ant1_2402_30~1000



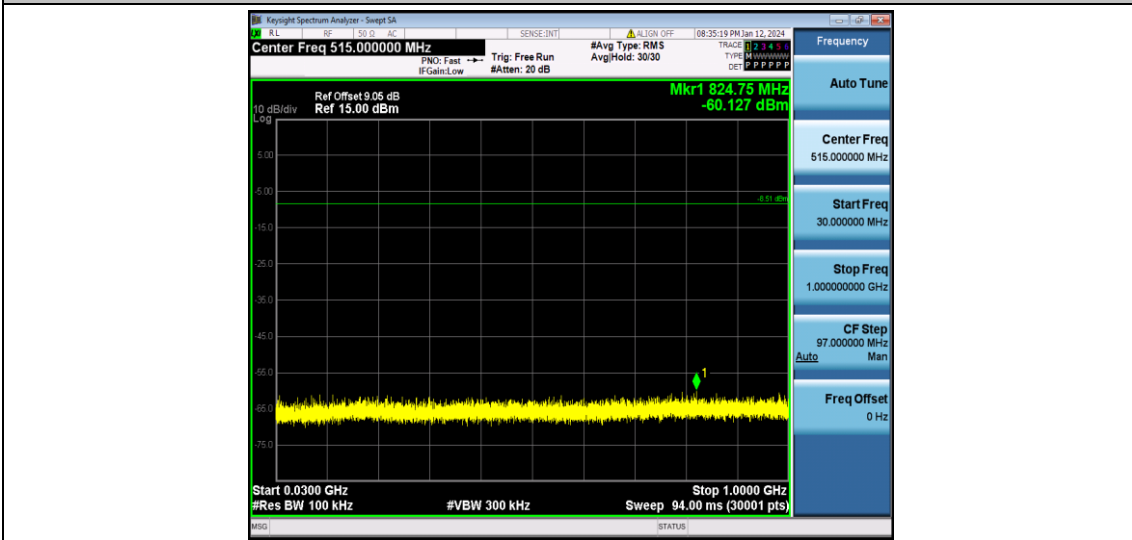
BLE_Ant1_2402_1000~26500



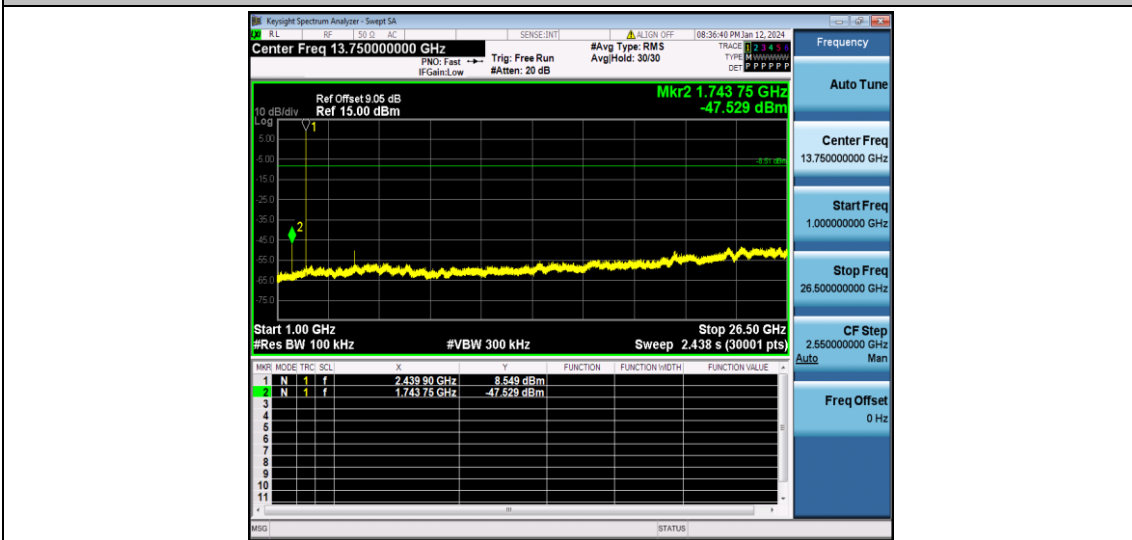
BLE_Ant1_2440_0~Reference



BLE_Ant1_2440_30~1000



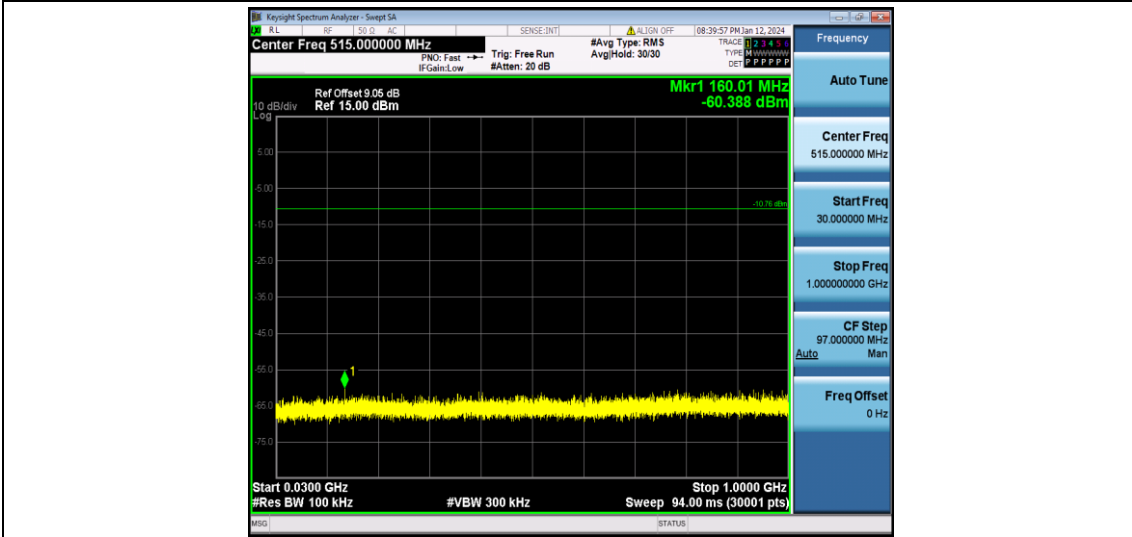
BLE_Ant1_2440_1000~26500



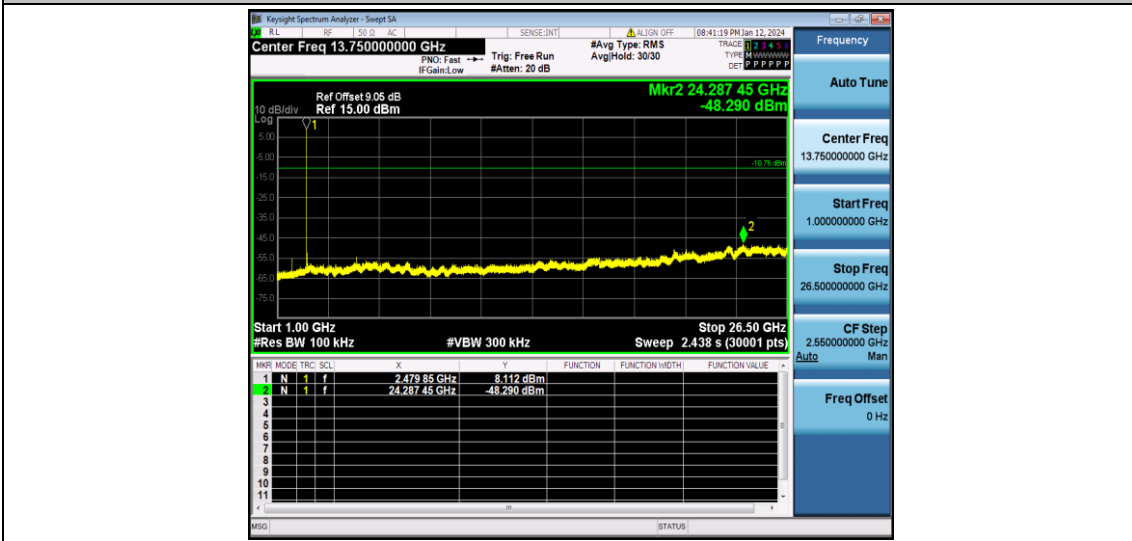
BLE_Ant1_2480_0~Reference



BLE_Ant1_2480_30~1000



BLE_Ant1_2480_1000~26500



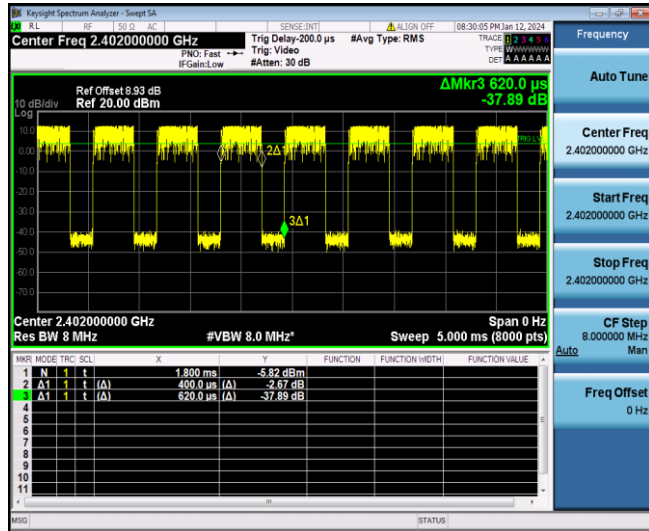
Appendix A.8: Duty Cycle

Test Result

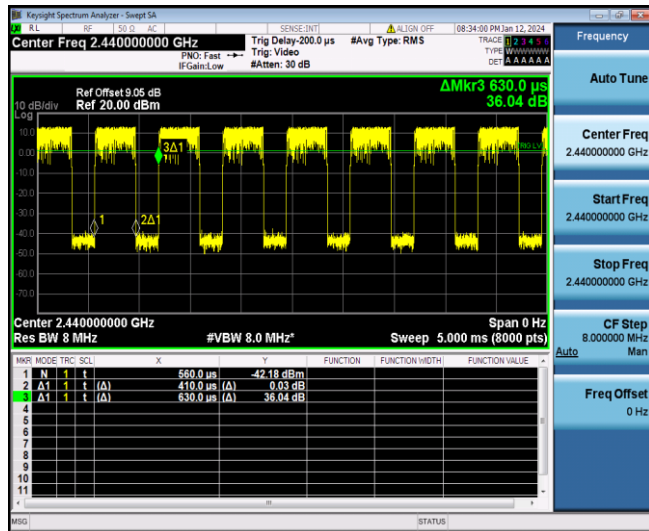
TestMode	Antenna	Freq(MHz)	ON Time [ms]	Period [ms]	X	DC [%]	Duty Cycle Factor[dB]	1/T Factor[KHz]
BLE	Ant1	2402	0.40	0.62	0.6452	64.52	1.90	2.50
		2440	0.41	0.63	0.6508	65.08	1.87	2.44
		2480	0.41	0.63	0.6508	65.08	1.87	2.44

Test Graphs

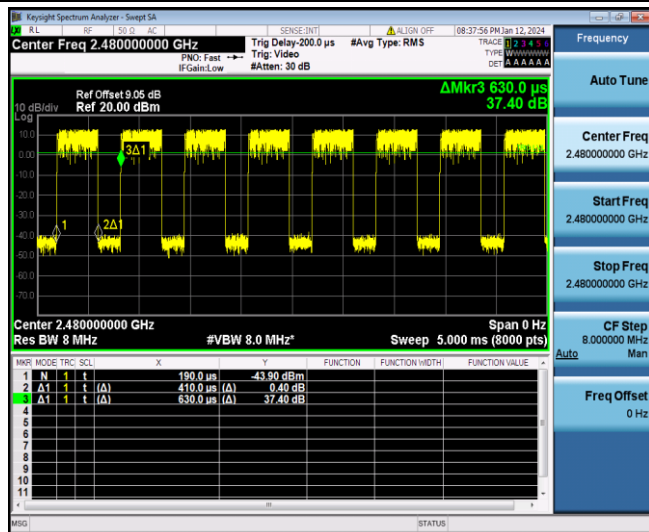
BLE_Ant1_2402



BLE_Ant1_2440



BLE_Ant1_2480



Appendix A.7: Emissions in Restricted Bands

Test Result

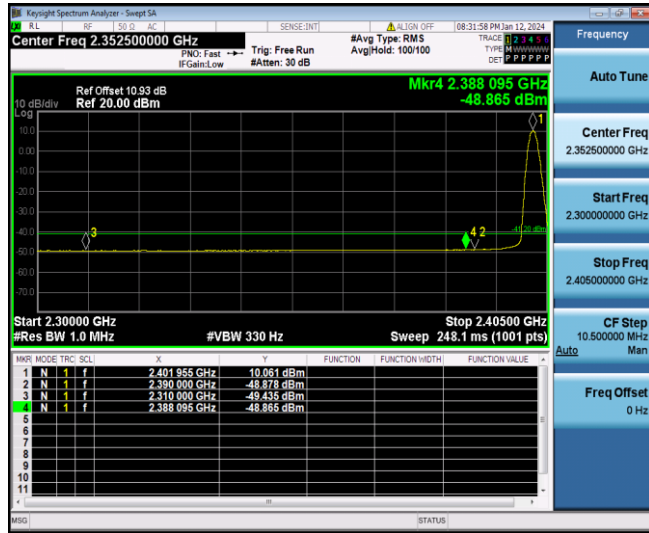
TestMode	Antenna	ChName	Freq(MHz)	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
BLE	Ant1	Low	2402	AV	2310.000	-49.44	≤-41.20	45.76	≤54	PASS
				AV	2388.095	-48.86	≤-41.20	46.34	≤54	PASS
				AV	2390.000	-48.88	≤-41.20	46.32	≤54	PASS
				Peak	2310.000	-42.85	≤-21.20	52.35	≤74	PASS
				Peak	2385.890	-34.72	≤-21.20	60.48	≤74	PASS
				Peak	2390.000	-36.28	≤-21.20	58.92	≤74	PASS
		High	2480	AV	2483.500	-45.23	≤-41.20	49.97	≤54	PASS
				AV	2483.520	-45.23	≤-41.20	49.97	≤54	PASS
				AV	2500.000	-48.66	≤-41.20	46.54	≤54	PASS
				Peak	2483.500	-41.22	≤-21.20	53.98	≤74	PASS
				Peak	2483.920	-27.96	≤-21.20	67.24	≤74	PASS
				Peak	2500.000	-41.49	≤-21.20	53.71	≤74	PASS

Note:

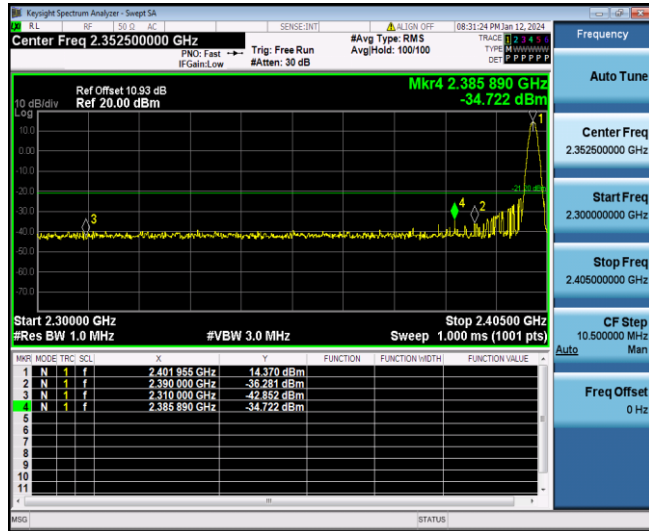
- The Antenna Gain is compensated in the graph.
- The Duty Cycle Factor and RBW Factor is compensated in the graph.
- The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

Test Graphs

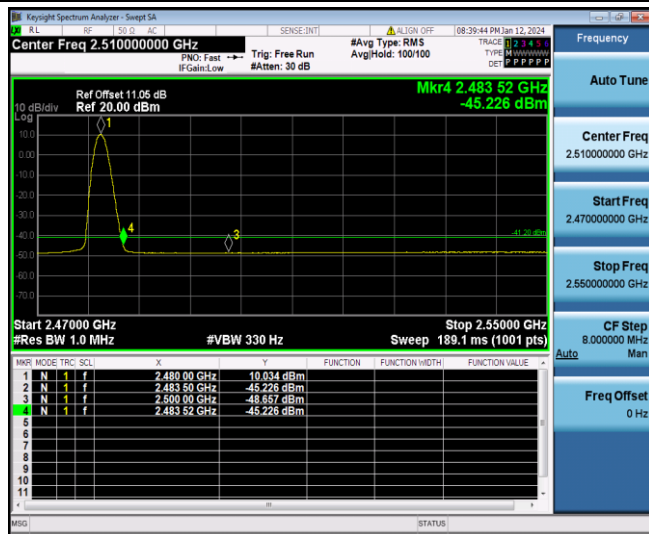
BLE_Ant1_Low_2402_AV



BLE_Ant1_Low_2402_Peak



BLE_Ant1_High_2480_AV



BLE_Ant1_High_2480_Peak

