Case No. : CTA24091800101	
Ambient Condition: 23 ℃, 52 %RH	
According Standard: ■Part15C	
Test Date: 2024.9.4	**Test Engineer:** Eric Wang

Appendix A.1: DTS Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE	Ant1	2402	0.620	2401.664	2402.284	0.5	PASS
		2440	0.592	2439.688	2440.280	0.5	PASS
		2480	0.612	2479.668	2480.280	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	1.0430	2401.4845	2402.5275	---	---
		2440	1.0504	2439.4776	2440.5280	---	---
		2480	1.0421	2479.4848	2480.5269	---	---

Test Graphs

BLE_Ant1_2402

BLE_Ant1_2440

BLE_Ant1_2480

Appendix A.3: Maximum conducted output power

Test Result Peak

TestMode	Antenna	Freq(MHz)	Conducted Peak Powert[dBm]	Conducted Limit[dBm]	Verdict
BLE	Ant1	2402	8.10	≤30	PASS
		2440	8.60	≤30	PASS
		2480	7.99	≤30	PASS

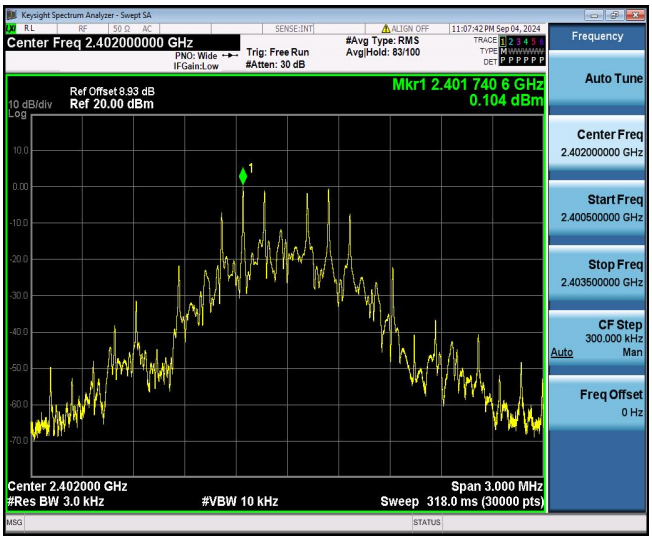
Appendix A.4: Maximum power spectral density

Test Result

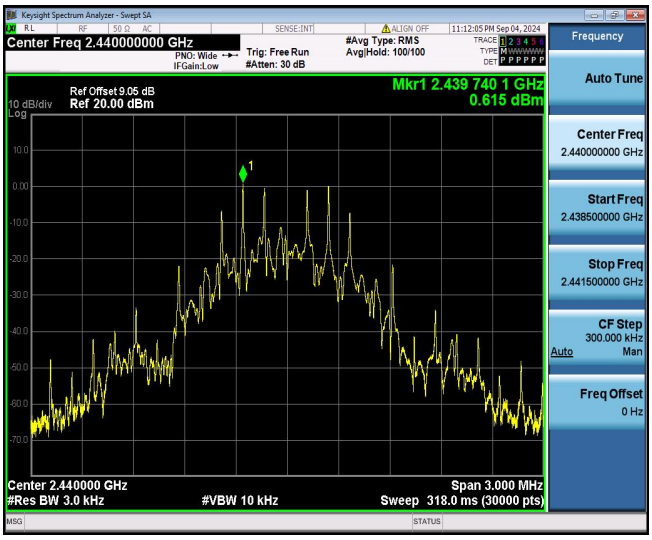
TestMode	Antenna	Freq(MHz)	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE	Ant1	2402	0.10	≤8.00	PASS
		2440	0.62	≤8.00	PASS
		2480	0.08	≤8.00	PASS

Test Graphs

BLE_Ant1_2402



BLE_Ant1_2440



BLE_Ant1_2480

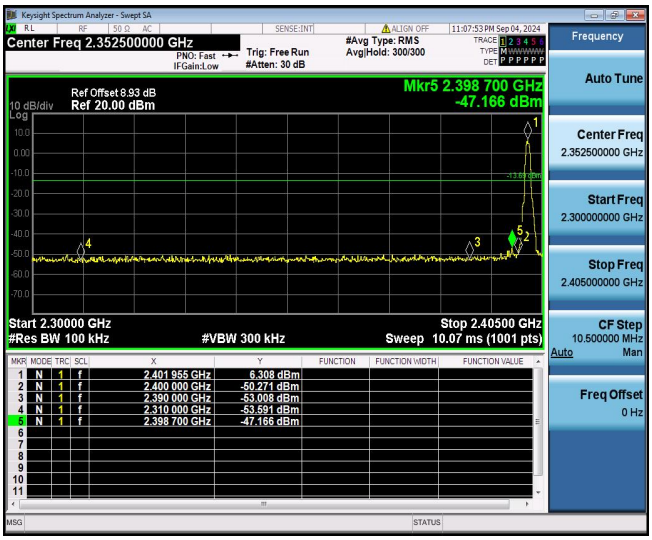
Appendix A.5: Band edge measurements

Test Result

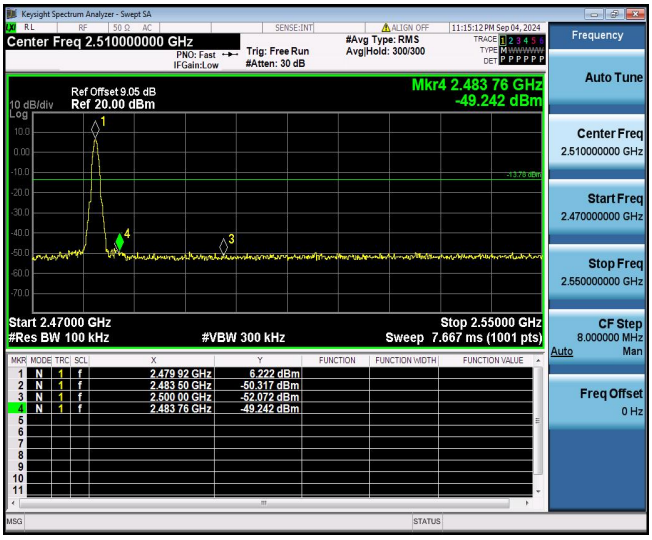
TestMode	Antenna	ChName	Freq(MHz)	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE	Ant1	Low	2402	6.31	-47.17	≤-13.69	PASS
		High	2480	6.22	-49.24	≤-13.78	PASS

Test Graphs

BLE_Ant1_Low_2402



BLE_Ant1_High_2480



Appendix A.6: Conducted Spurious Emission

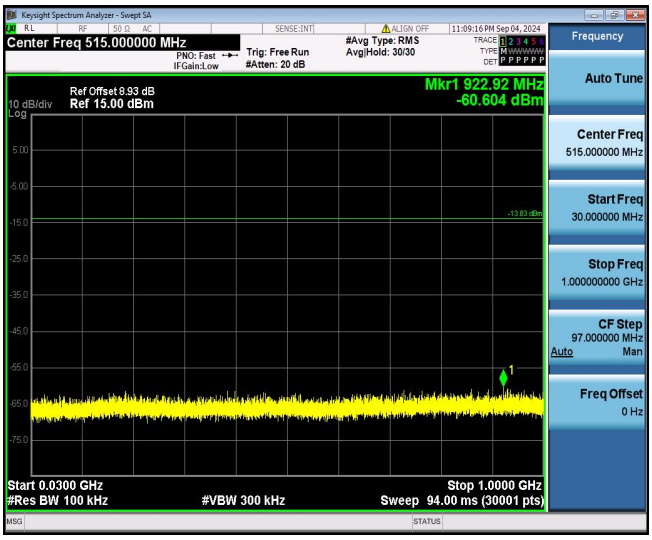
Test Result

TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE	Ant1	2402	Reference	6.17	6.17	---	PASS
			30~1000	6.17	-60.6	≤-13.83	PASS
			1000~26500	6.17	-48.43	≤-13.83	PASS
		2440	Reference	6.09	6.09	---	PASS
			30~1000	6.09	-60.7	≤-13.91	PASS
			1000~26500	6.09	-47.65	≤-13.91	PASS
		2480	Reference	6.33	6.33	---	PASS
			30~1000	6.33	-59.72	≤-13.67	PASS
			1000~26500	6.33	-47.88	≤-13.67	PASS

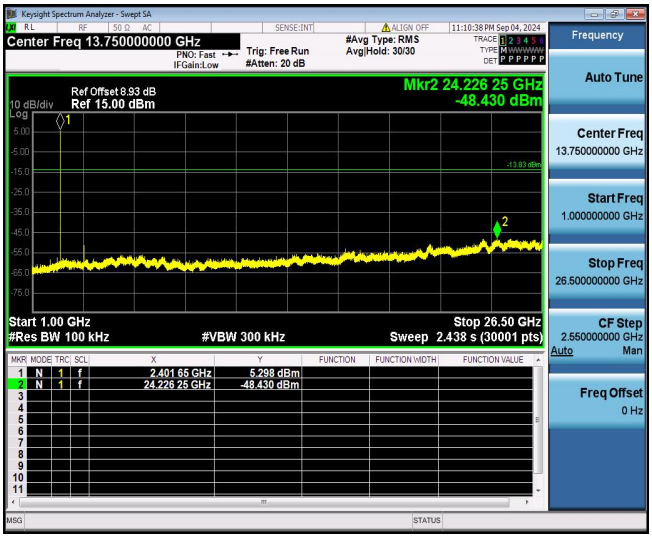
Test Graphs

BLE_Ant1_2402_0~Reference

BLE_Ant1_2402_30~1000

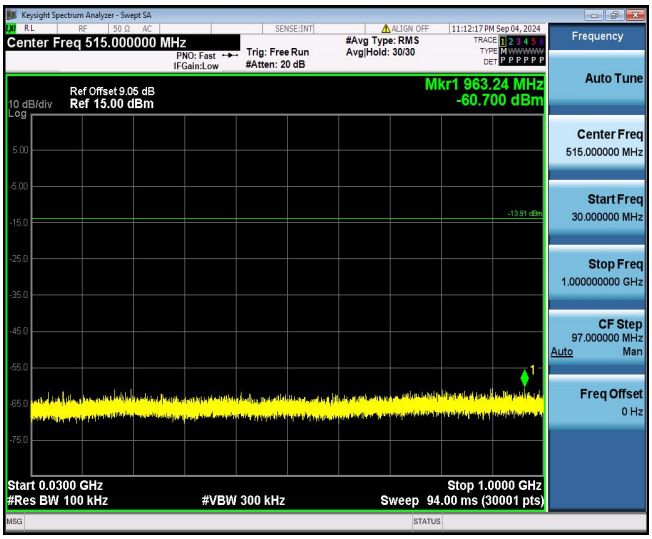


BLE_Ant1_2402_1000~26500

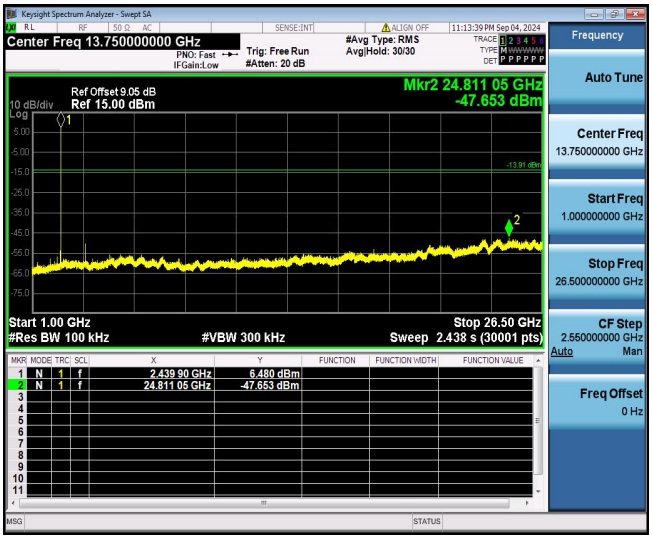


BLE_Ant1_2440_0~Reference

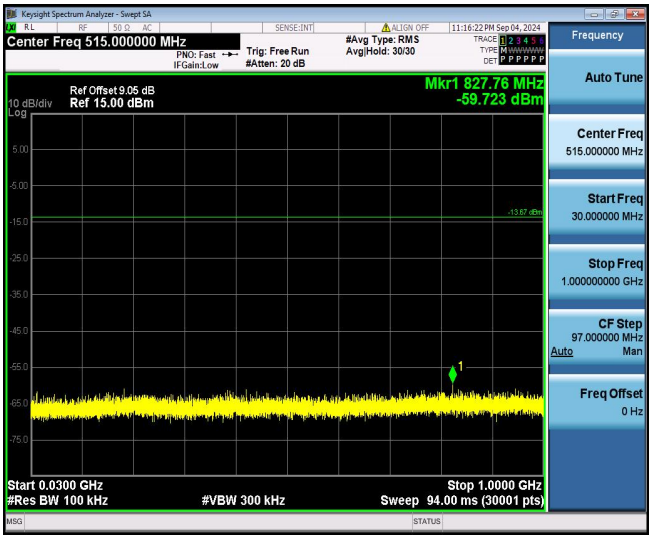
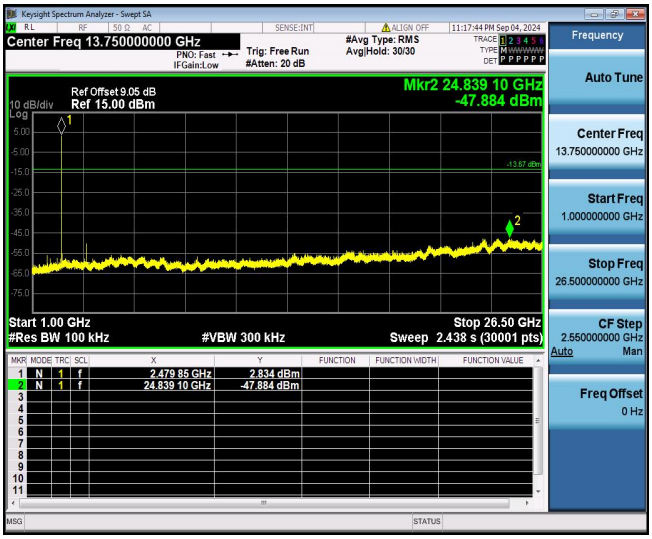
BLE_Ant1_2440_30~1000



BLE_Ant1_2440_1000~26500



BLE_Ant1_2480_0~Reference

BLE_Ant1_2480_30~1000

BLE_Ant1_2480_1000~26500


Appendix A.7: Emissions in Restricted Bands

Test Result

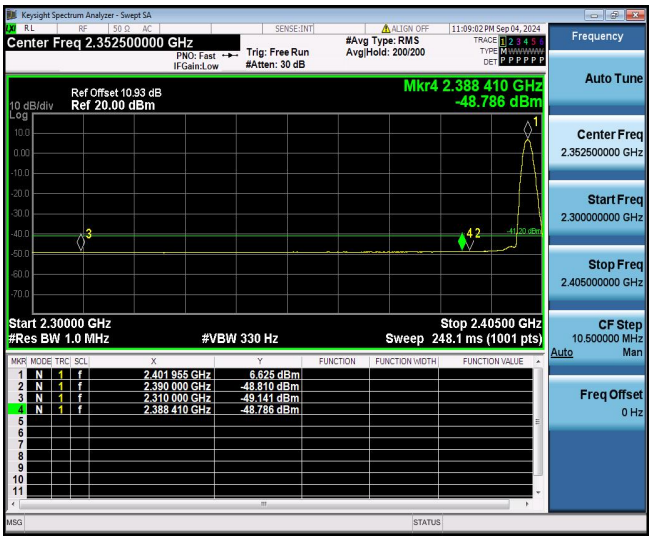
TestMode	Antenna	ChName	Freq(MHz)	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
BLE	Ant1	Low	2402	AV	2310.000	-49.14	≤-41.20	46.06	≤54	PASS
				AV	2388.410	-48.79	≤-41.20	46.41	≤54	PASS
				AV	2390.000	-48.81	≤-41.20	46.39	≤54	PASS
				Peak	2310.000	-40.93	≤-21.20	54.27	≤74	PASS
				Peak	2335.070	-38.8	≤-21.20	56.40	≤74	PASS
				Peak	2390.000	-41.49	≤-21.20	53.71	≤74	PASS
		High	2480	AV	2483.500	-45.79	≤-41.20	49.41	≤54	PASS
				AV	2483.520	-45.79	≤-41.20	49.41	≤54	PASS
				AV	2500.000	-48.61	≤-41.20	46.59	≤54	PASS
				Peak	2483.500	-37.77	≤-21.20	57.43	≤74	PASS
				Peak	2483.600	-37.73	≤-21.20	57.47	≤74	PASS
				Peak	2500.000	-39.49	≤-21.20	55.71	≤74	PASS

Note：

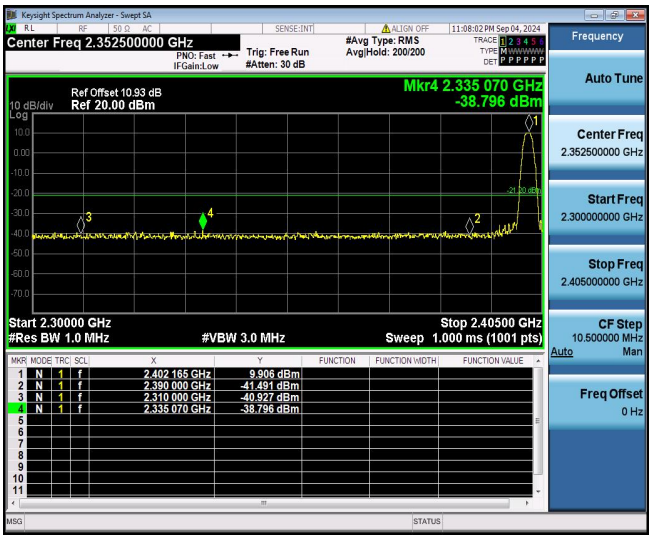
1. The Antenna Gain is compensated in the graph.
2. The Duty Cycle Factor and RBW Factor is compensated in the graph.
3. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

Test Graphs

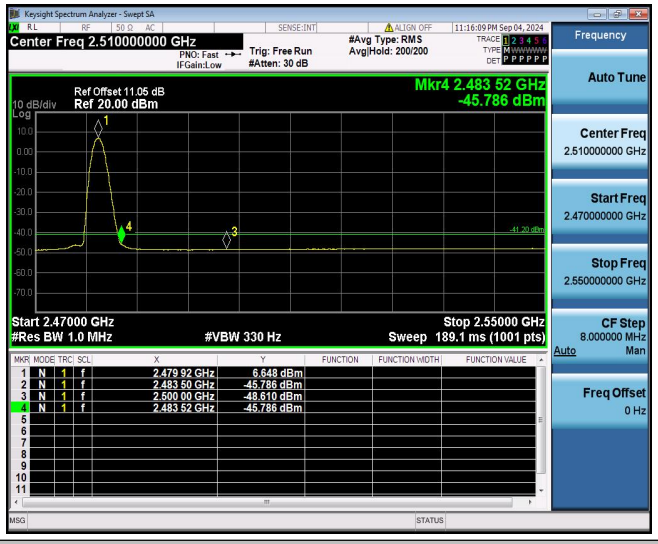
BLE_Ant1_Low_2402_AV



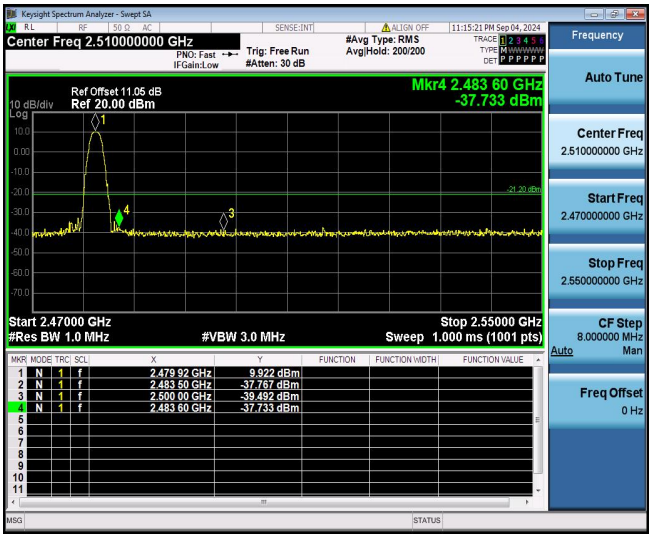
BLE_Ant1_Low_2402_Peak



BLE_Ant1_High_2480_AV



BLE_Ant1_High_2480_Peak


Keysight Spectrum Analyzer - Swept SA
Center Freq 2.510000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
Avg|Hold: 200/200
11:15:21 PM Sep 04, 2024
Ref Offset 11.05 dB
10 dB/div
Log
Ref 20.00 dBm
Mkr4 2.483 60 GHz
-37.733 dBm
-21.20 dBm
Start 2.47000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 2.55000 GHz
Sweep 1.000 ms (1001 pts)
1 N 1 f 2.479 92 GHz 9.922 dBm
2 N 1 f 2.483 50 GHz -37.767 dBm
3 N 1 f 2.500 00 GHz -39.492 dBm
4 N 1 f 2.483 60 GHz -37.733 dBm
Frequency
Auto Tune
Center Freq
2.510000000 GHz
Start Freq
2.470000000 GHz
Stop Freq
2.550000000 GHz
CF Step
8.000000 MHz
Auto
Man
Freq Offset
0 Hz