Appendix: Bluetooth LE

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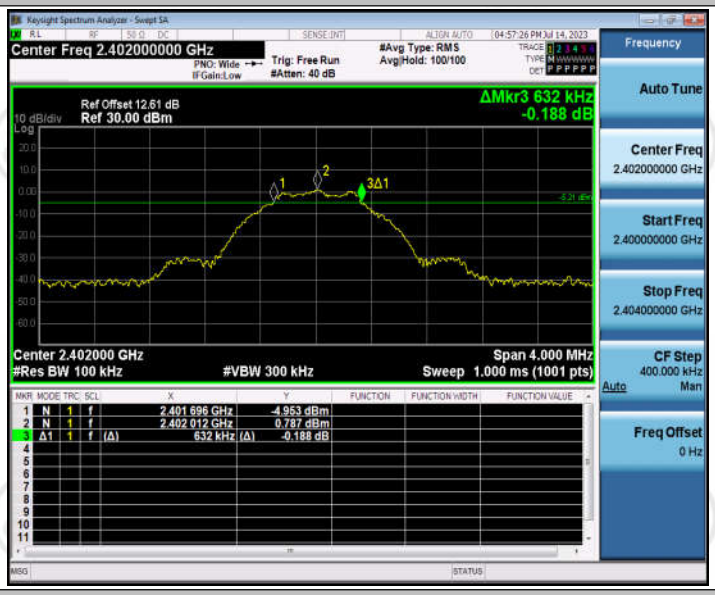
Appendix A: DTS Bandwidth

Test Result

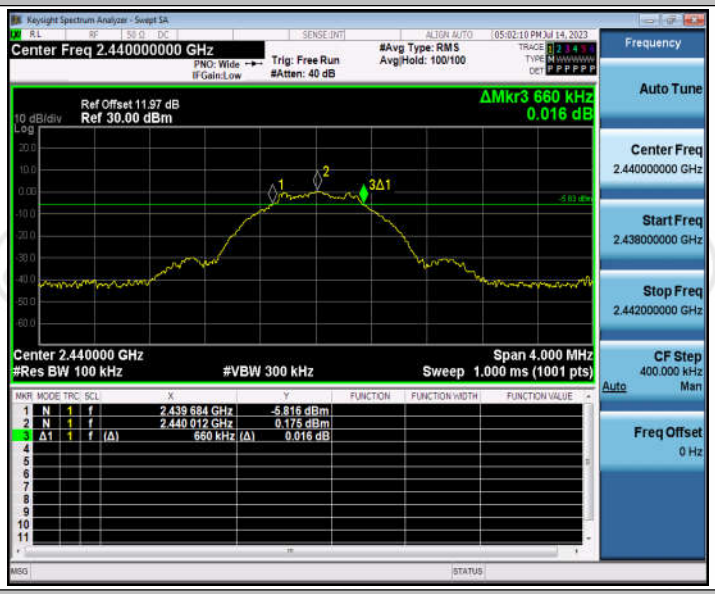
Test Mode	Antenna	Frequency [MHz]	DTS BW [MHz]	FL [MHz]	FH [MHz]	Limit [MHz]	Verdict
BLE_1Mbps	Ant1	2402	0.632	2401.696	2402.328	0.5	PASS
		2440	0.660	2439.684	2440.344	0.5	PASS
		2480	0.656	2479.684	2480.340	0.5	PASS
BLE_2Mbps	Ant1	2402	0.944	2401.456	2402.400	0.5	PASS
		2440	1.100	2439.456	2440.556	0.5	PASS
		2480	0.904	2479.472	2480.376	0.5	PASS

Test Graphs

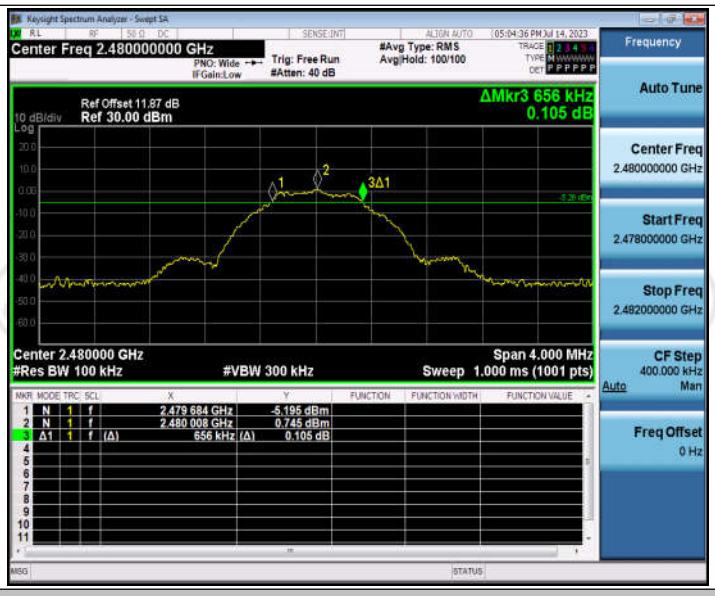
BLE_1Mbps_Ant1_2402MHz



BLE_1Mbps_Ant1_2440MHz



BLE_1Mbps_Ant1_2480MHz



BLE_2Mbps_Ant1_2402MHz

BLE_2Mbps_Ant1_2440MHz

BLE_2Mbps_Ant1_2480MHz

Appendix B: Occupied Channel Bandwidth

Test Result

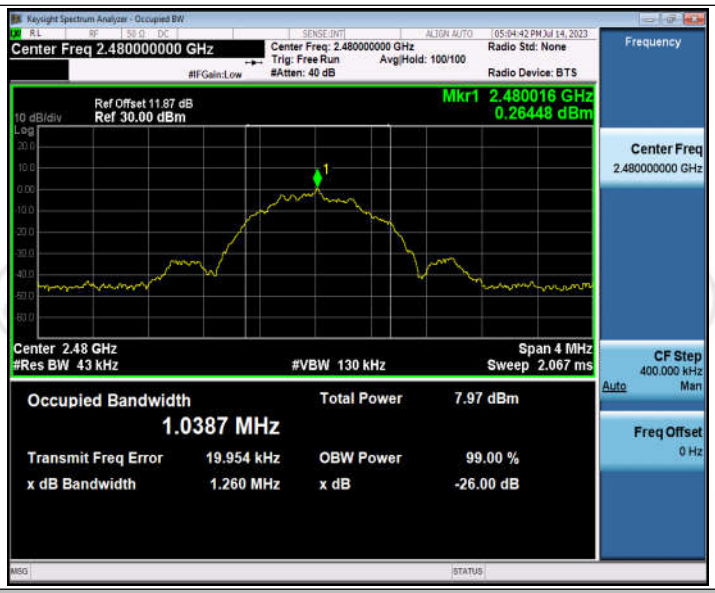
Test Mode	Antenna	Frequency [MHz]	OCB [MHz]	FL [MHz]	FH [MHz]
BLE_1Mbps	Ant1	2402	1.0317	2401.5026	2402.5343
		2440	1.0460	2439.4892	2440.5352
		2480	1.0387	2479.5006	2480.5393
BLE_2Mbps	Ant1	2402	2.0678	2400.9930	2403.0608
		2440	2.0640	2438.9996	2441.0636
		2480	2.0799	2478.9777	2481.0576

Test Graphs

BLE_1Mbps_Ant1_2402MHz

BLE_1Mbps_Ant1_2440MHz

BLE_1Mbps_Ant1_2480MHz



BLE_2Mbps_Ant1_2402MHz

BLE_2Mbps_Ant1_2440MHz

BLE_2Mbps_Ant1_2480MHz

Appendix C: Maximum conducted output power

Test Result Peak

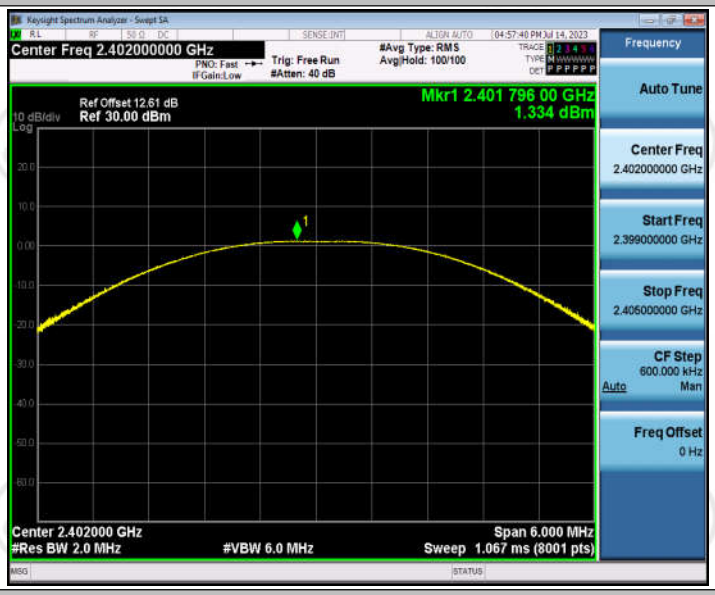
Test Mode	Antenna	Frequency [MHz]	Conducted Peak Powert [dBm]	Conducted Limit [dBm]	Antenna Gain [dBi]	EIRP [dBm]	EIRP Limit [dBm]	Verdict
BLE_1Mbps	Ant1	2402	1.33	≤30	2.42	3.75	≤36	PASS
		2440	0.68	≤30	2.42	3.10	≤36	PASS
		2480	1.35	≤30	2.42	3.77	≤36	PASS
BLE_2Mbps	Ant1	2402	0.86	≤30	2.42	3.28	≤36	PASS
		2440	0.72	≤30	2.42	3.14	≤36	PASS
		2480	**1.43**	≤30	2.42	**3.85**	≤36	PASS

Note:

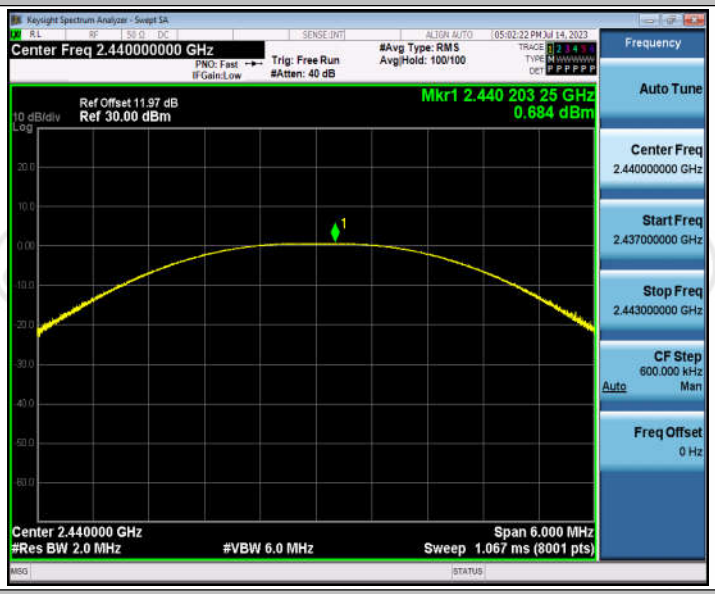
EIRP[dBm]=Conducted Peak Powert[dBm]+Antenna Gain[dBi]

Test Graphs Peak

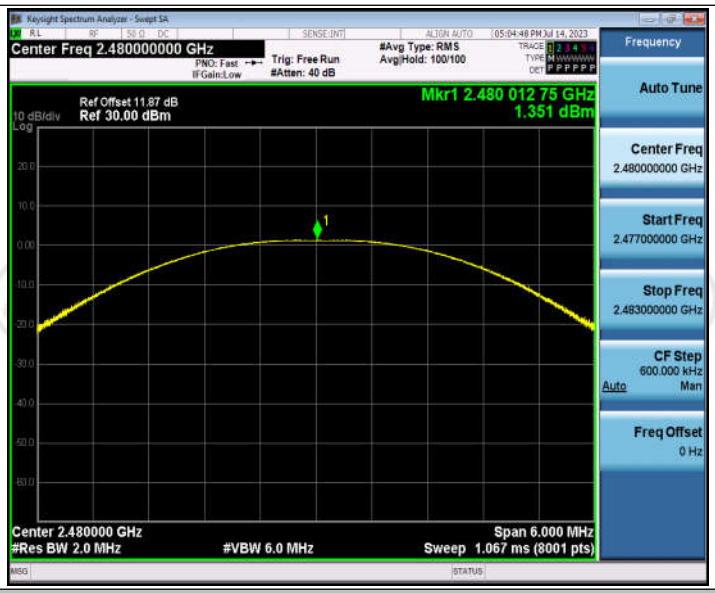
BLE_1Mbps_Ant1_2402MHz



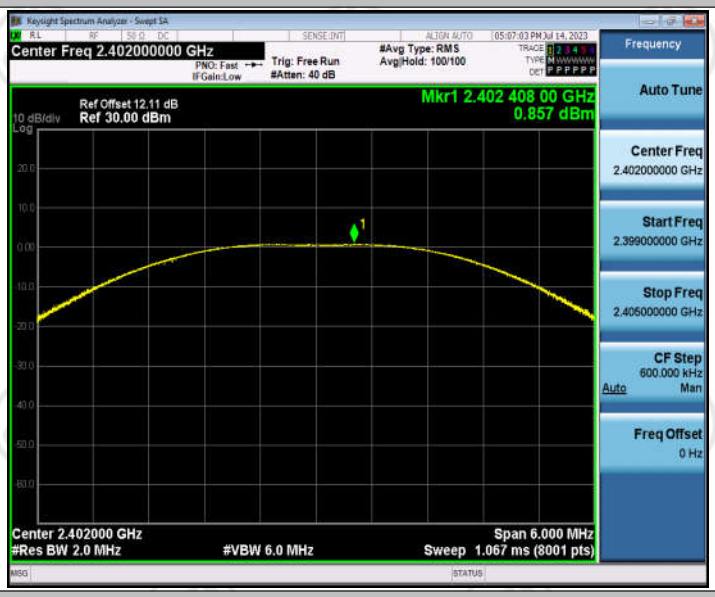
BLE_1Mbps_Ant1_2440MHz



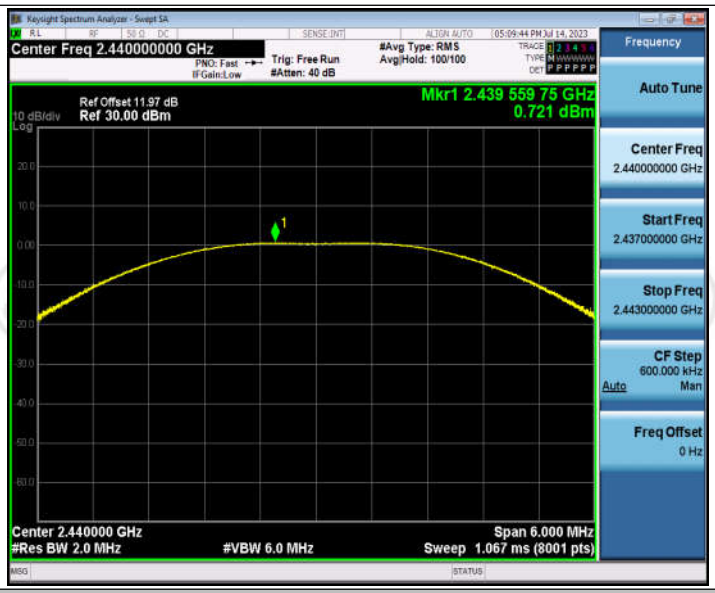
BLE_1Mbps_Ant1_2480MHz



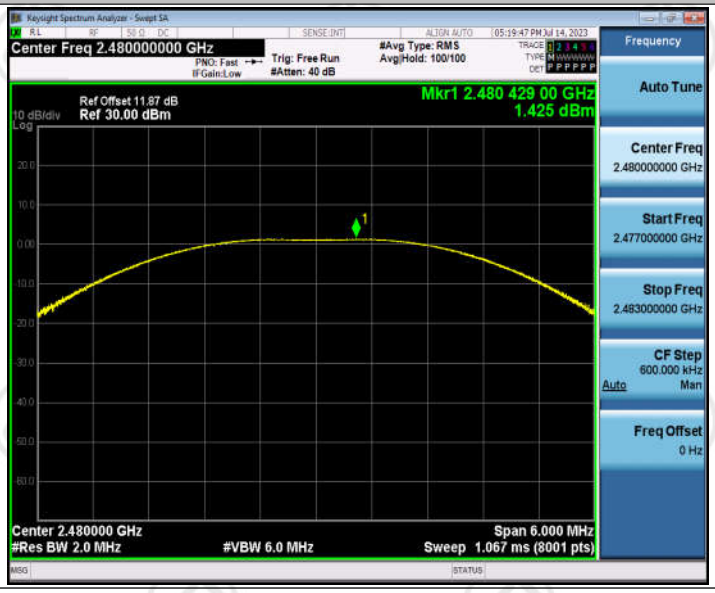
BLE_2Mbps_Ant1_2402MHz



BLE_2Mbps_Ant1_2440MHz



BLE_2Mbps_Ant1_2480MHz



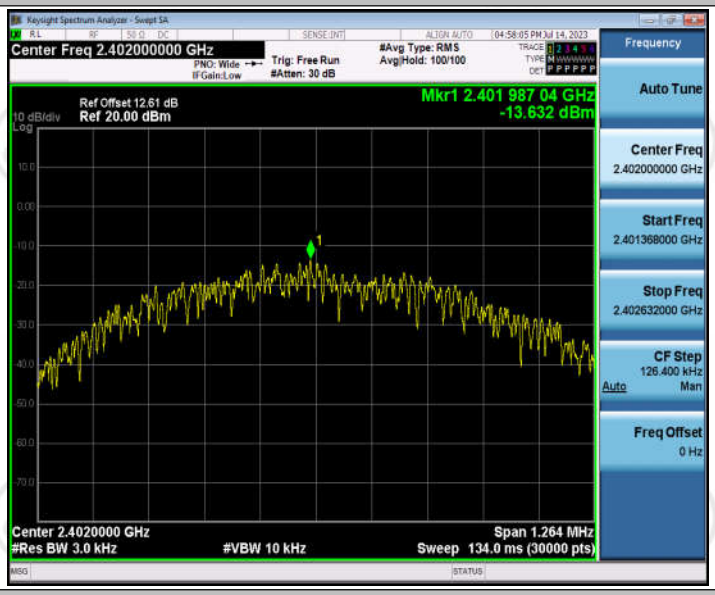
Appendix D: Maximum power spectral density

Test Result

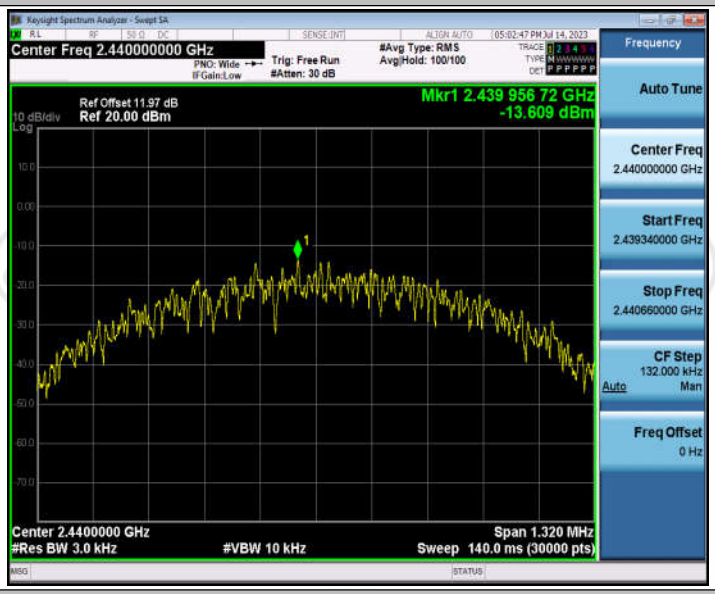
Test Mode	Antenna	Frequency [MHz]	Result [dBm/3kHz]	Limit [dBm/3kHz]	Verdict
BLE_1Mbps	Ant1	2402	-13.63	≤8.00	PASS
		2440	-13.61	≤8.00	PASS
		2480	-13.13	≤8.00	PASS
BLE_2Mbps	Ant1	2402	-15.71	≤8.00	PASS
		2440	-16.43	≤8.00	PASS
		2480	-14.14	≤8.00	PASS

Test Graphs

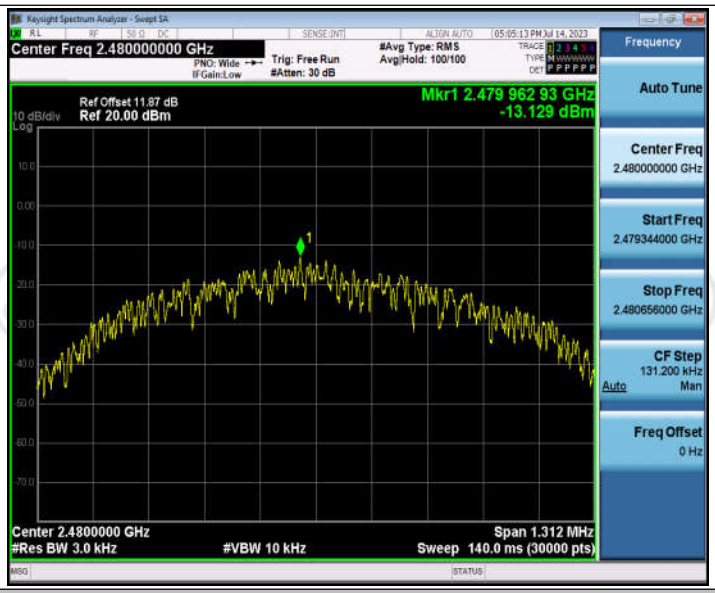
BLE_1Mbps_Ant1_2402MHz



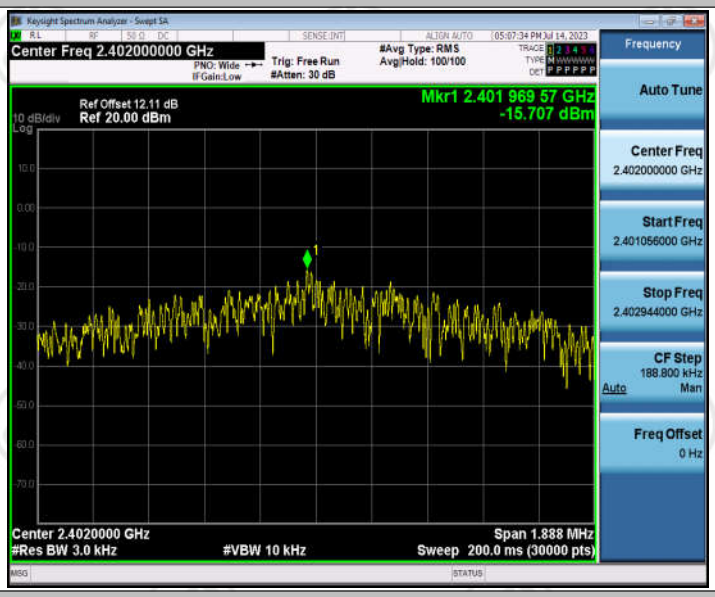
BLE_1Mbps_Ant1_2440MHz



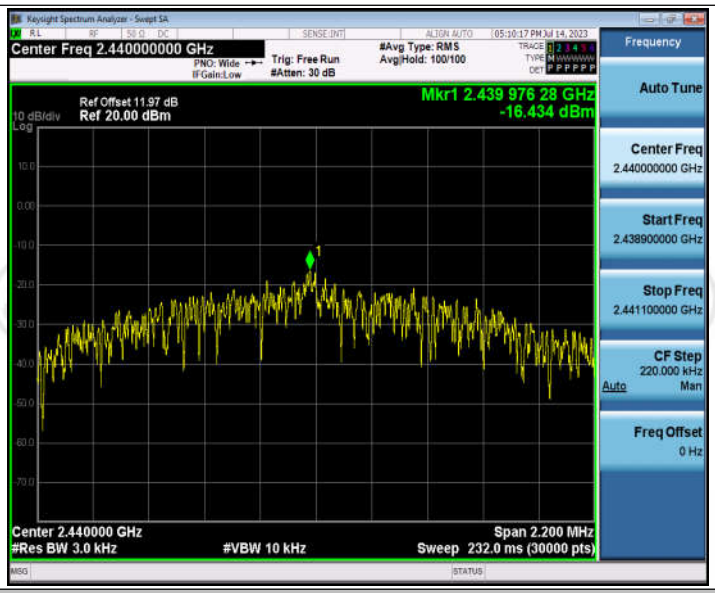
BLE_1Mbps_Ant1_2480MHz



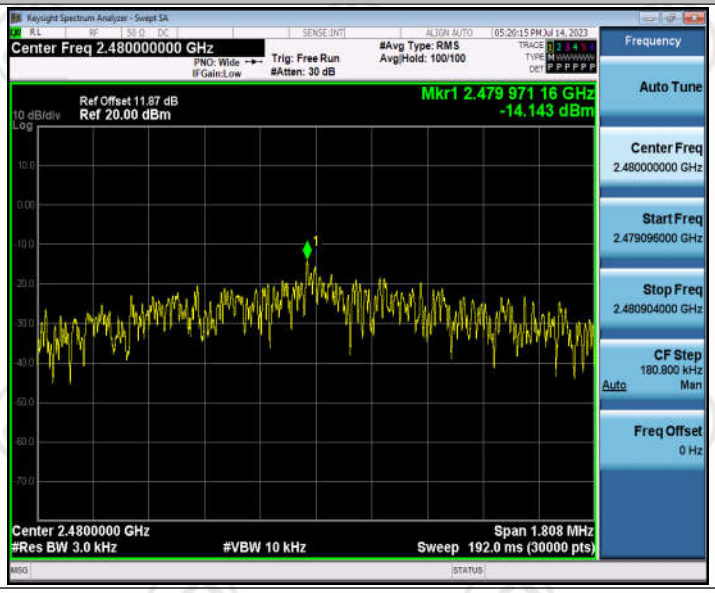
BLE_2Mbps_Ant1_2402MHz



BLE_2Mbps_Ant1_2440MHz



BLE_2Mbps_Ant1_2480MHz



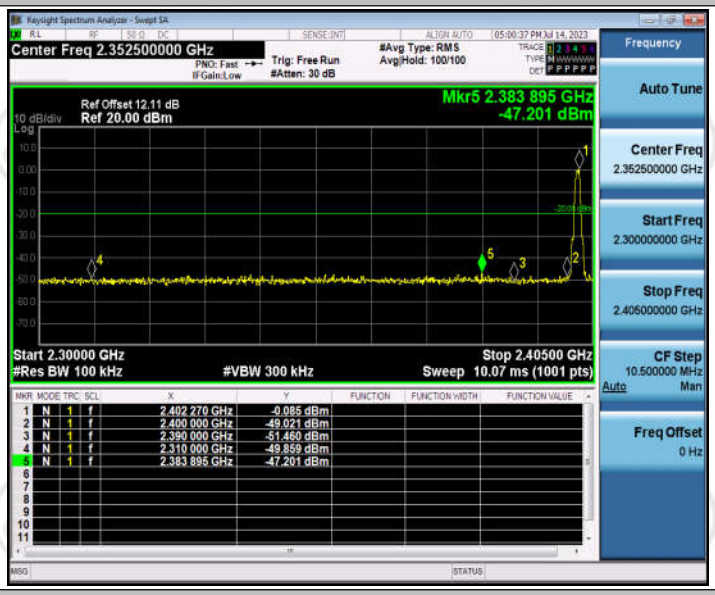
Appendix E: Band edge measurements

Test Result

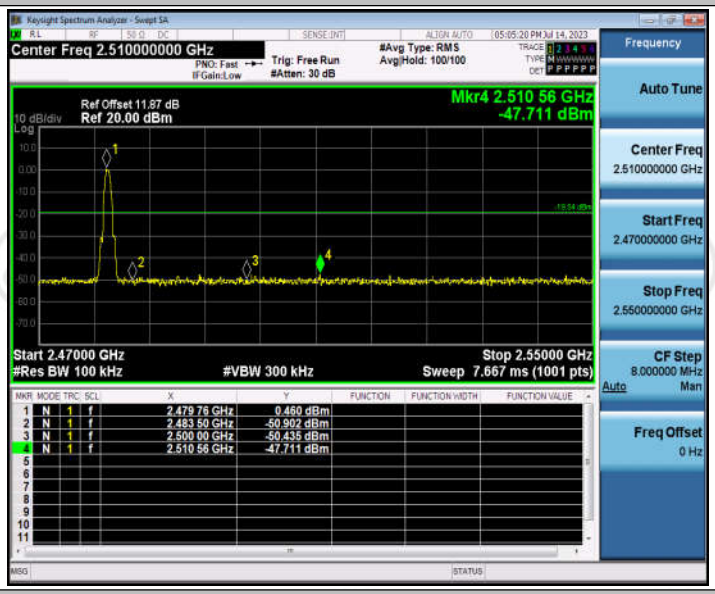
Test Mode	Antenna	ChName	Frequency [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
BLE_1Mbps	Ant1	Low	2402	-0.09	-47.2	≤-20.09	PASS
		High	2480	0.46	-47.71	≤-19.54	PASS
BLE_2Mbps	Ant1	Low	2402	0.51	-31.09	≤-19.49	PASS
		High	2480	0.97	-47.51	≤-19.03	PASS

Test Graphs

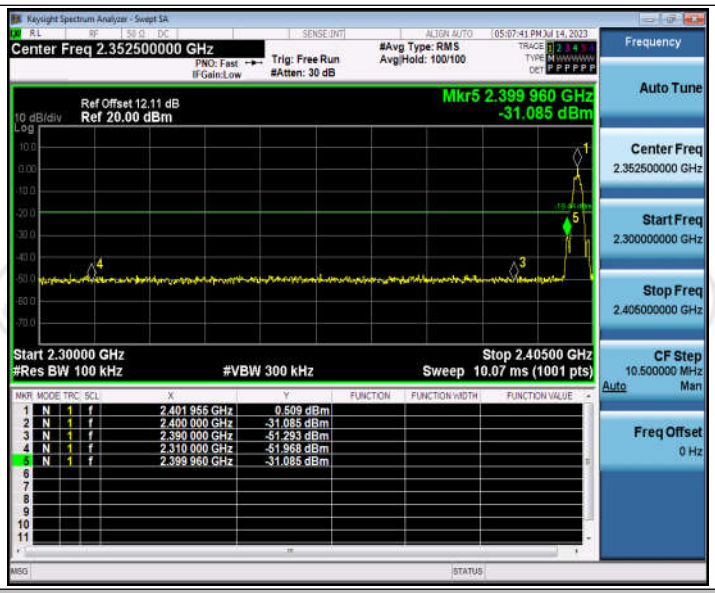
BLE_1Mbps_Ant1_Low_2402MHz



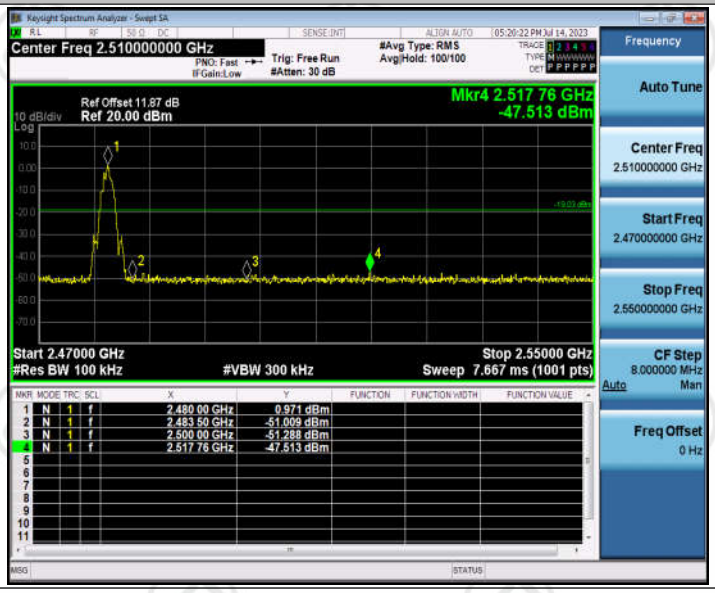
BLE_1Mbps_Ant1_High_2480MHz



BLE_2Mbps_Ant1_Low_2402MHz



BLE_2Mbps_Ant1_High_2480MHz



Appendix F: Conducted Spurious Emission

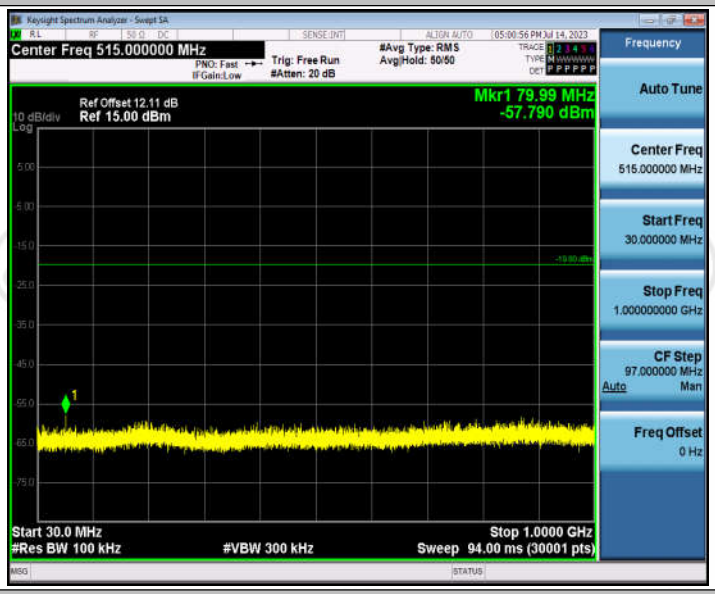
Test Result

Test Mode	Antenna	Frequency [MHz]	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
BLE_1Mbps	Ant1	2402	Reference	0.20	0.20	---	PASS
			30~1000	0.20	-57.79	≤-19.8	PASS
			1000~26500	0.20	-51.31	≤-19.8	PASS
		2440	Reference	0.17	0.17	---	PASS
			30~1000	0.17	-58.28	≤-19.83	PASS
			1000~26500	0.17	-50.61	≤-19.83	PASS
		2480	Reference	0.81	0.81	---	PASS
			30~1000	0.81	-58.79	≤-19.19	PASS
			1000~26500	0.81	-51.66	≤-19.19	PASS
BLE_2Mbps	Ant1	2402	Reference	0.35	0.35	---	PASS
			30~1000	0.35	-58.6	≤-19.65	PASS
			1000~26500	0.35	-50.94	≤-19.65	PASS
		2440	Reference	0.25	0.25	---	PASS
			30~1000	0.25	-58.07	≤-19.75	PASS
			1000~26500	0.25	-51.11	≤-19.75	PASS
		2480	Reference	0.91	0.91	---	PASS
			30~1000	0.91	-58.17	≤-19.09	PASS
			1000~26500	0.91	-44.5	≤-19.09	PASS

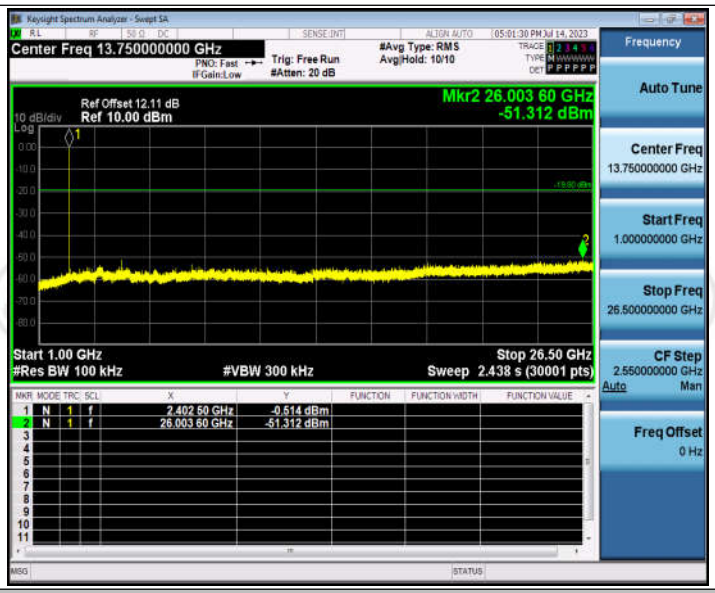
Test Graphs

BLE_1Mbps_Ant1_2402MHz_0~Reference

BLE_1Mbps_Ant1_2402MHz_(30MHz~1000MHz)

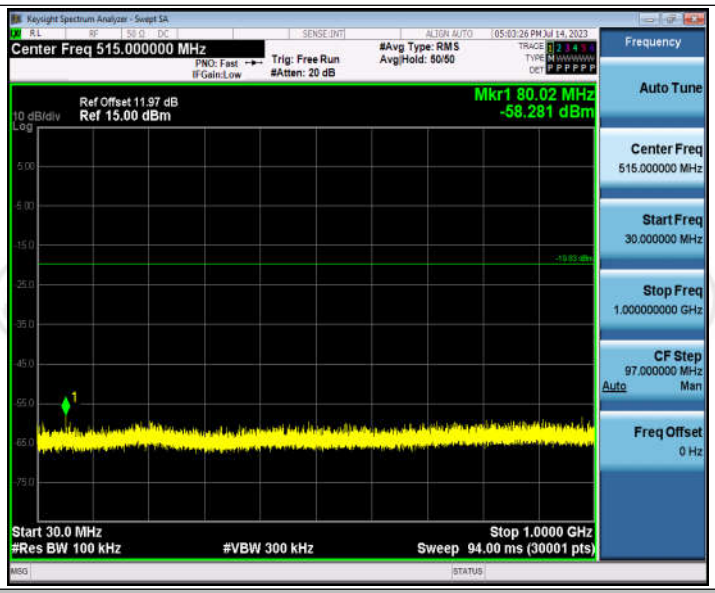


BLE_1Mbps_Ant1_2402MHz_(1000MHz~26500MHz)

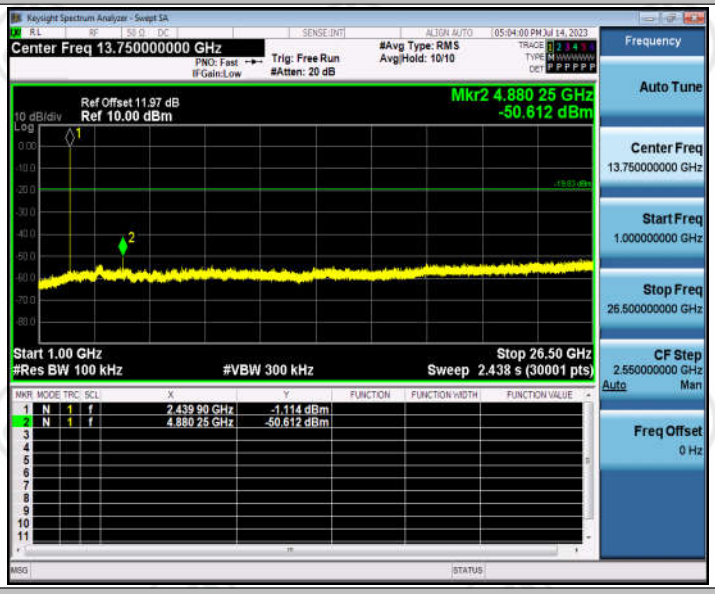


BLE_1Mbps_Ant1_2440MHz_0~Reference

BLE_1Mbps_Ant1_2440MHz_(30MHz~1000MHz)

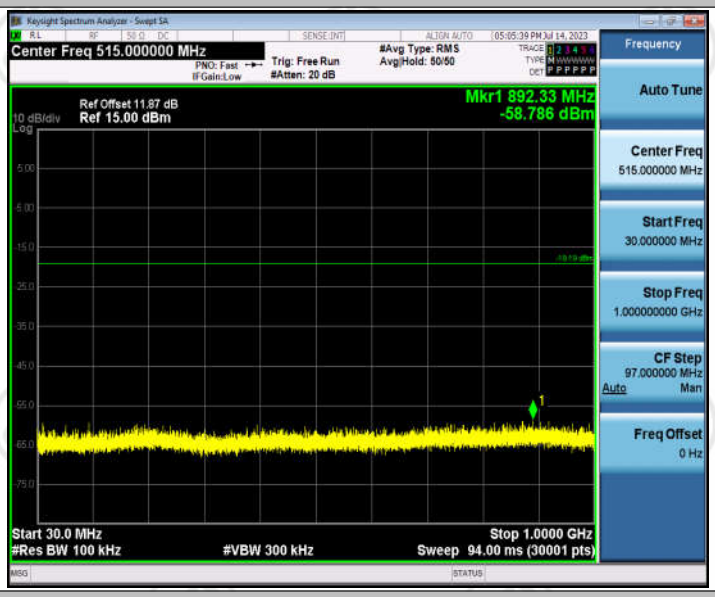


BLE_1Mbps_Ant1_2440MHz_(1000MHz~26500MHz)

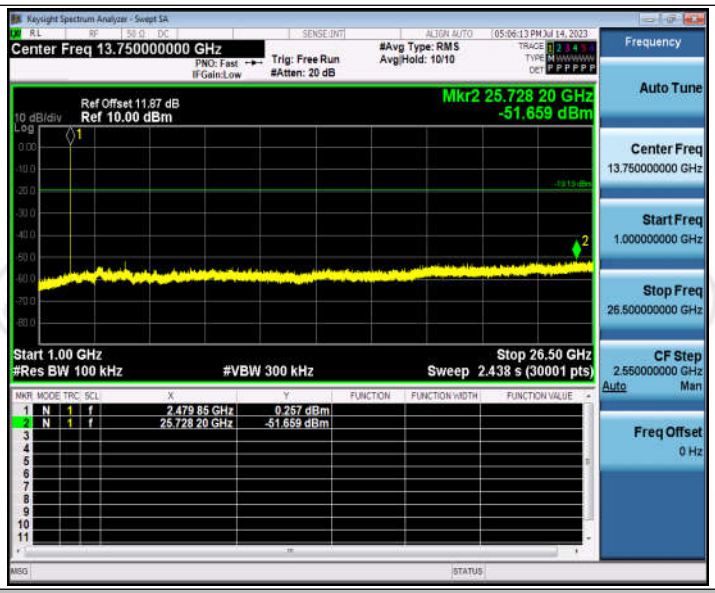


BLE_1Mbps_Ant1_2480MHz_0~Reference

BLE_1Mbps_Ant1_2480MHz_(30MHz~1000MHz)

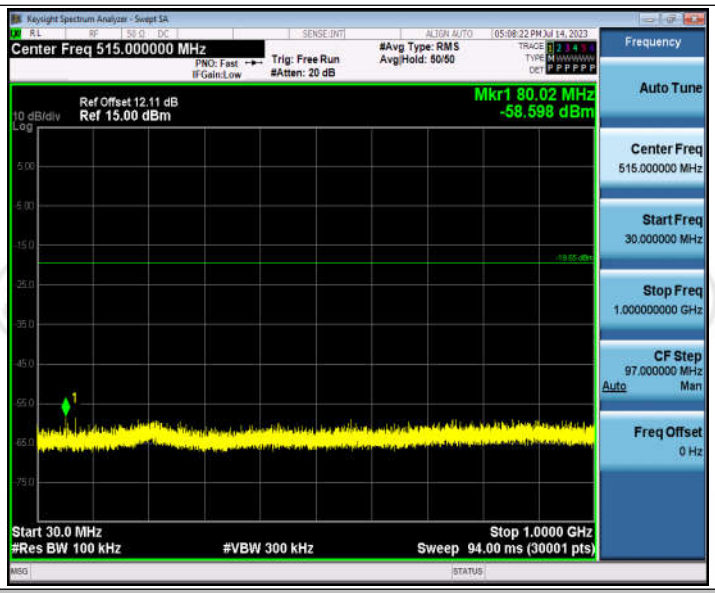


BLE_1Mbps_Ant1_2480MHz_(1000MHz~26500MHz)

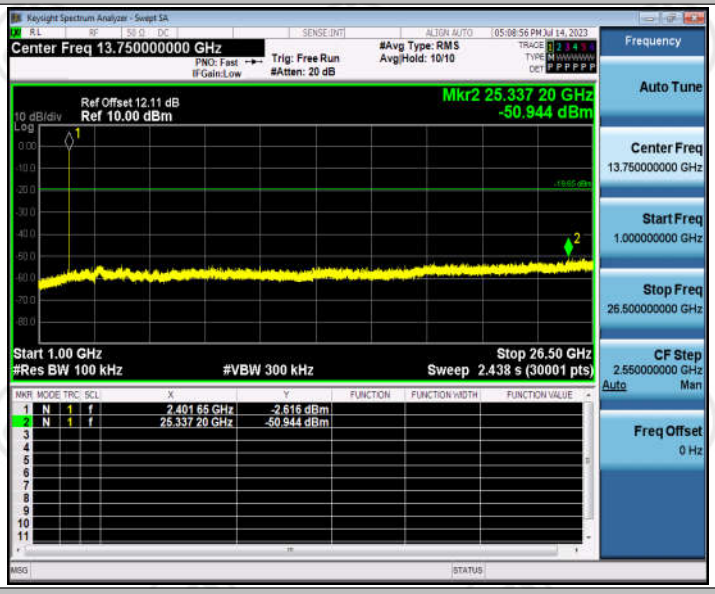


BLE_2Mbps_Ant1_2402MHz_0~Reference

BLE_2Mbps_Ant1_2402MHz_(30MHz~1000MHz)

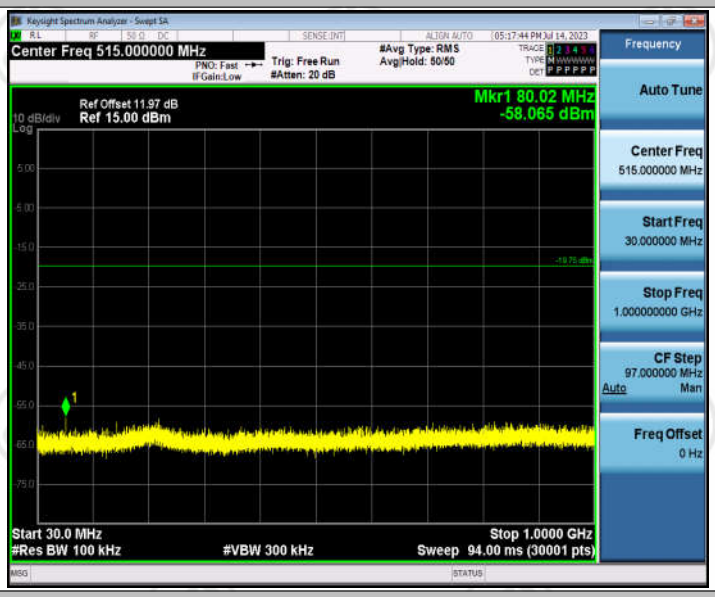


BLE_2Mbps_Ant1_2402MHz_(1000MHz~26500MHz)

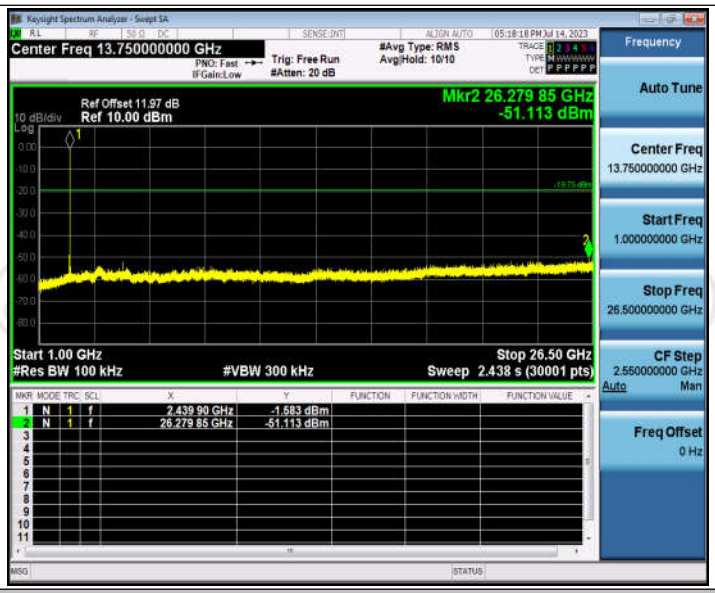


BLE_2Mbps_Ant1_2440MHz_0~Reference

BLE_2Mbps_Ant1_2440MHz_(30MHz~1000MHz)

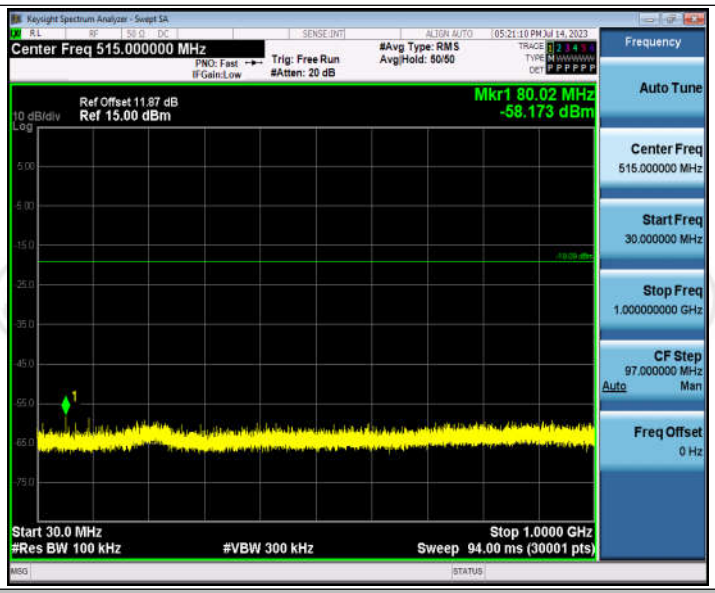


BLE_2Mbps_Ant1_2440MHz_(1000MHz~26500MHz)

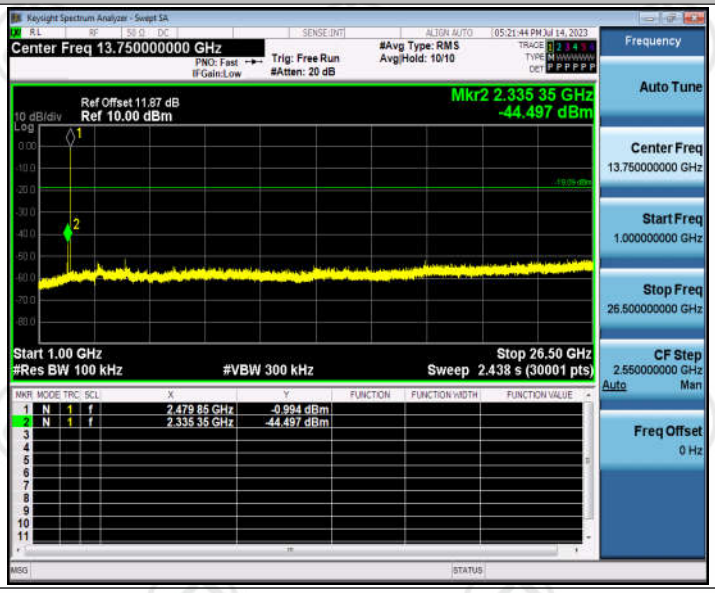


BLE_2Mbps_Ant1_2480MHz_0~Reference

BLE_2Mbps_Ant1_2480MHz_(30MHz~1000MHz)



BLE_2Mbps_Ant1_2480MHz_(1000MHz~26500MHz)



END OF REPORT