

Appendix Test Data for BT(BDR/EDR) (Conducted Measurement)

Product Name: Bluetooth Mechanical Keyboard

Trade Mark: Keychron

Test Model: Keychron Q4 Pro

FCC ID: 2ASF4-Q4PRO

Environmental Conditions

Temperature:	25.5°C
Relative Humidity:	55%
ATM Pressure:	100.0 kPa
Test Engineer:	Anna Hu
Supervised by:	Hugo Chen
NOTE	N/A

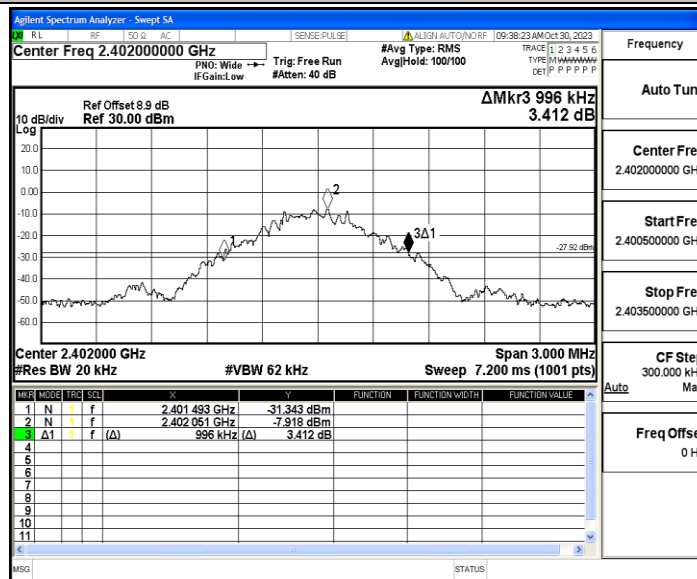
Appendix A: 20dB Emission Bandwidth

Test Result

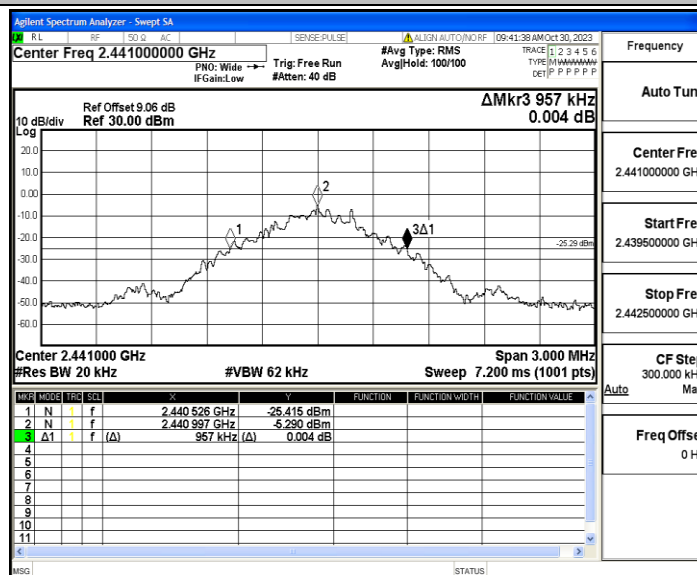
TestMode	Antenna	Channel	20db EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.996	2401.493	2402.489	---	---
		2441	0.957	2440.526	2441.483	---	---
		2480	0.870	2479.535	2480.405	---	---

Test Graphs

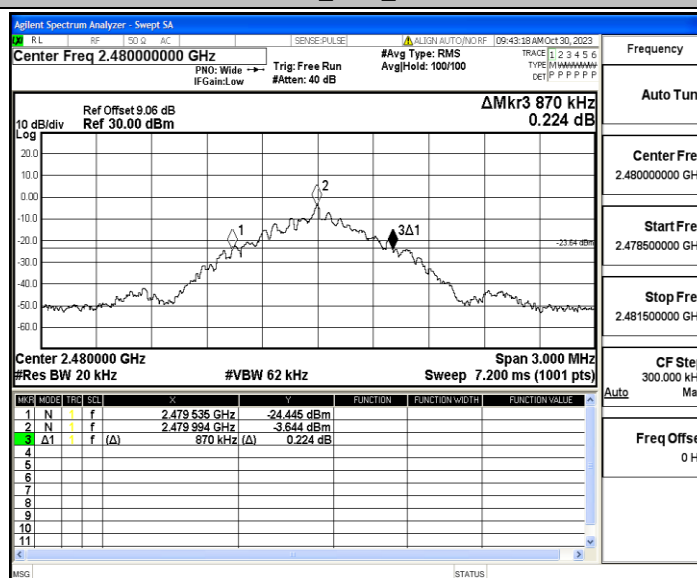
DH5_Ant1_2402



DH5_Ant1_2441



DH5_Ant1_2480



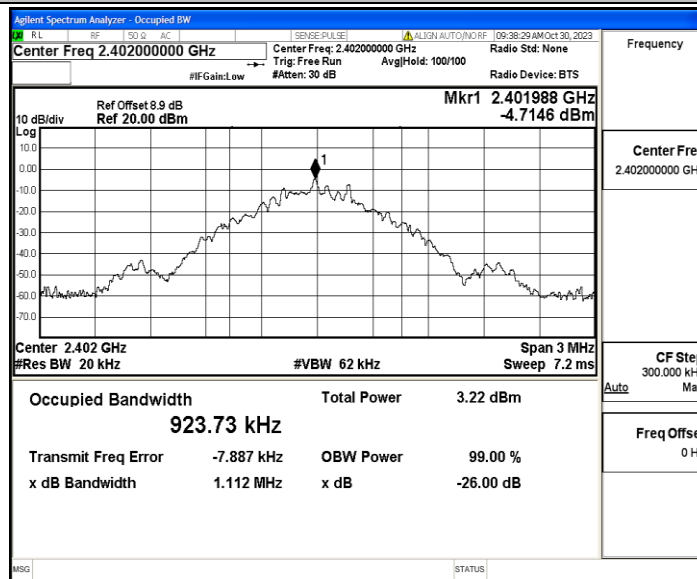
Appendix B: Occupied Channel Bandwidth

Test Result

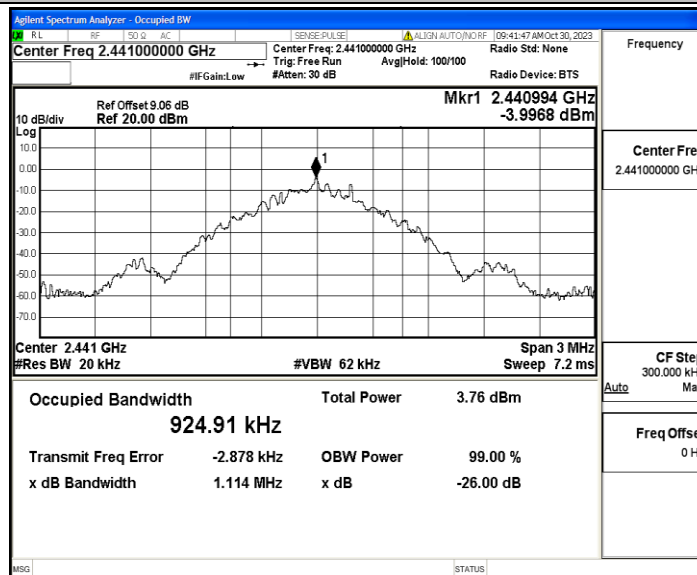
TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.92373	2401.5302	2402.4540	---	---
		2441	0.92491	2440.5347	2441.4596	---	---
		2480	0.92493	2479.5392	2480.4641	---	---

Test Graphs

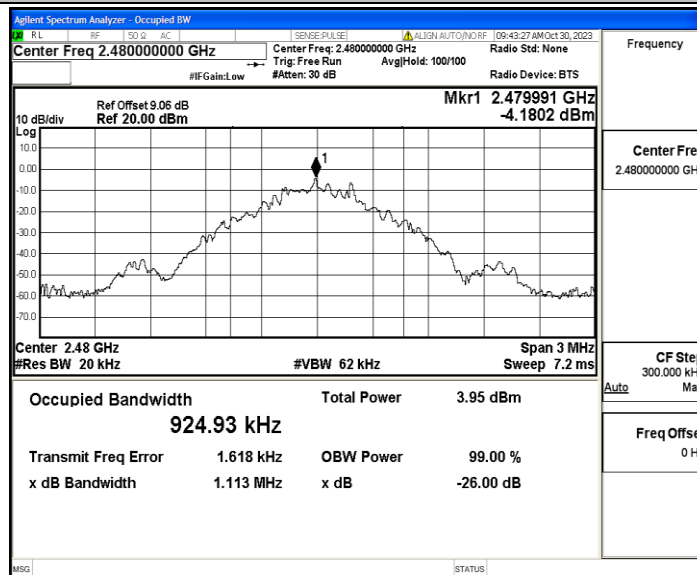
DH5_Ant1_2402



DH5_Ant1_2441



DH5_Ant1_2480



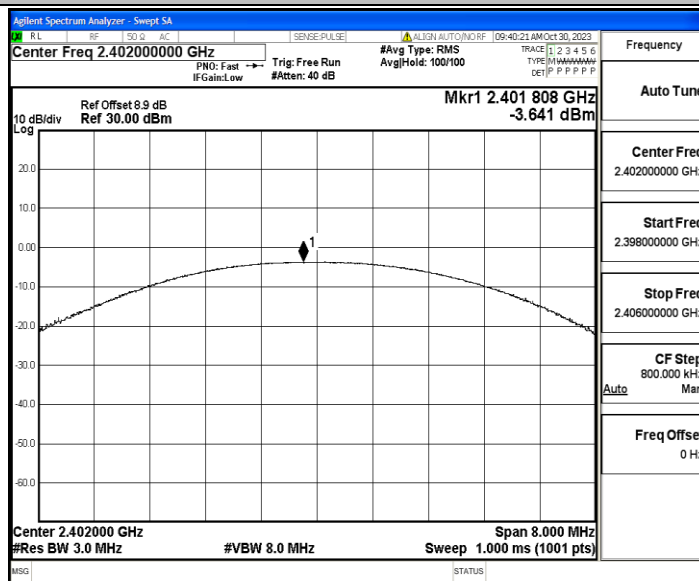
Appendix C: Maximum Peak conducted output power

Test Result

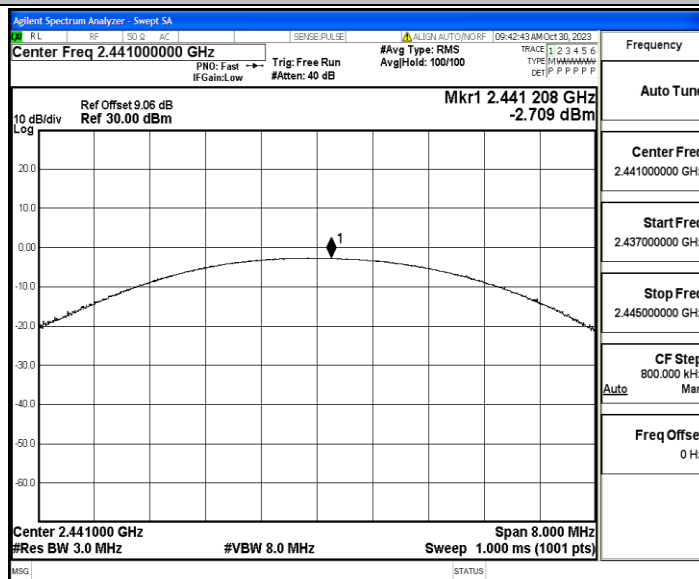
TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
DH5	Ant1	2402	-3.64	≤20.97	PASS
		2441	-2.71	≤20.97	PASS
		2480	-2.72	≤20.97	PASS

Test Graphs

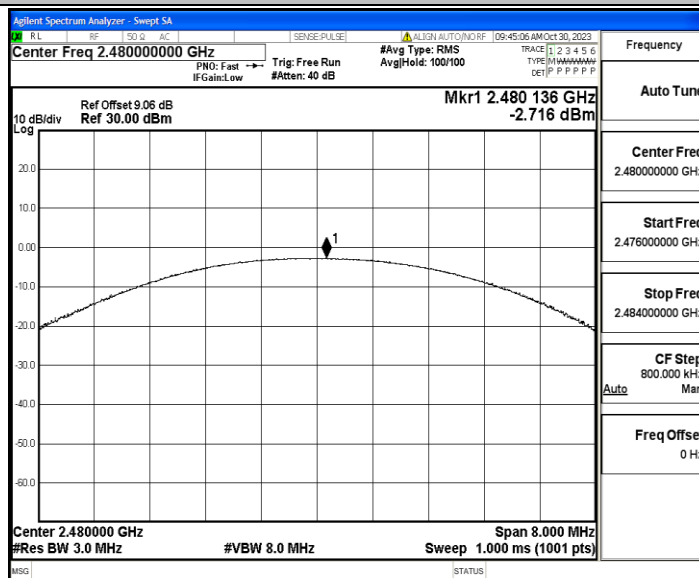
DH5_Ant1_2402



DH5_Ant1_2441



DH5_Ant1_2480

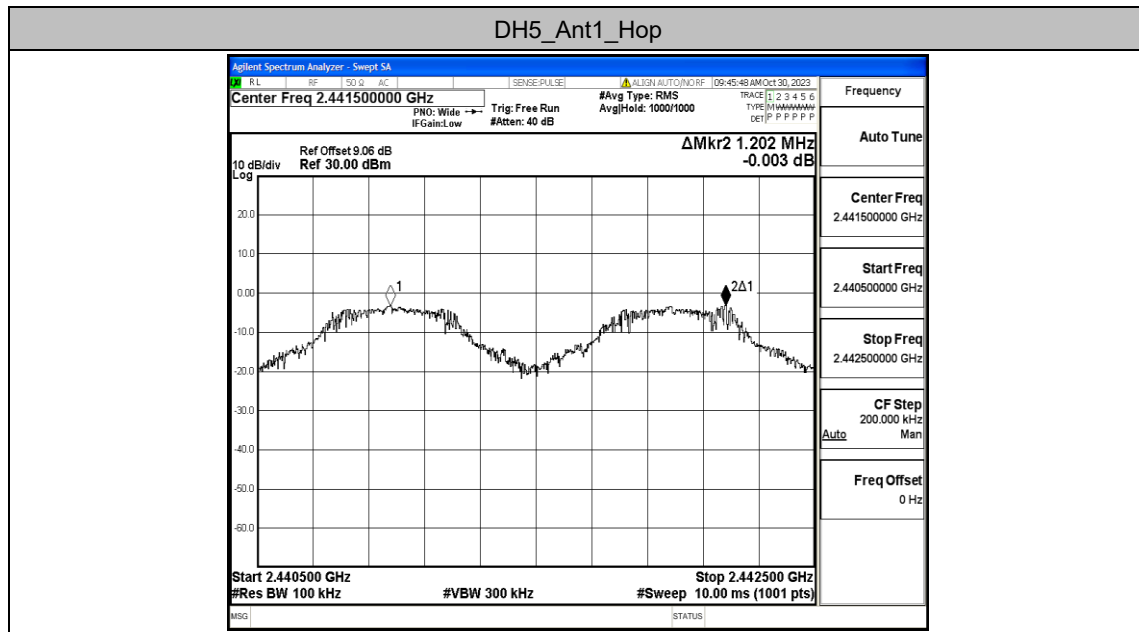


Appendix D: Carrier frequency separation

Test Result

TestMode	Antenna	Channel	Result[MHz]	Limit[MHz]	Verdict
DH5	Ant1	Hop	1.202	≥ 0.996	PASS

Test Graphs

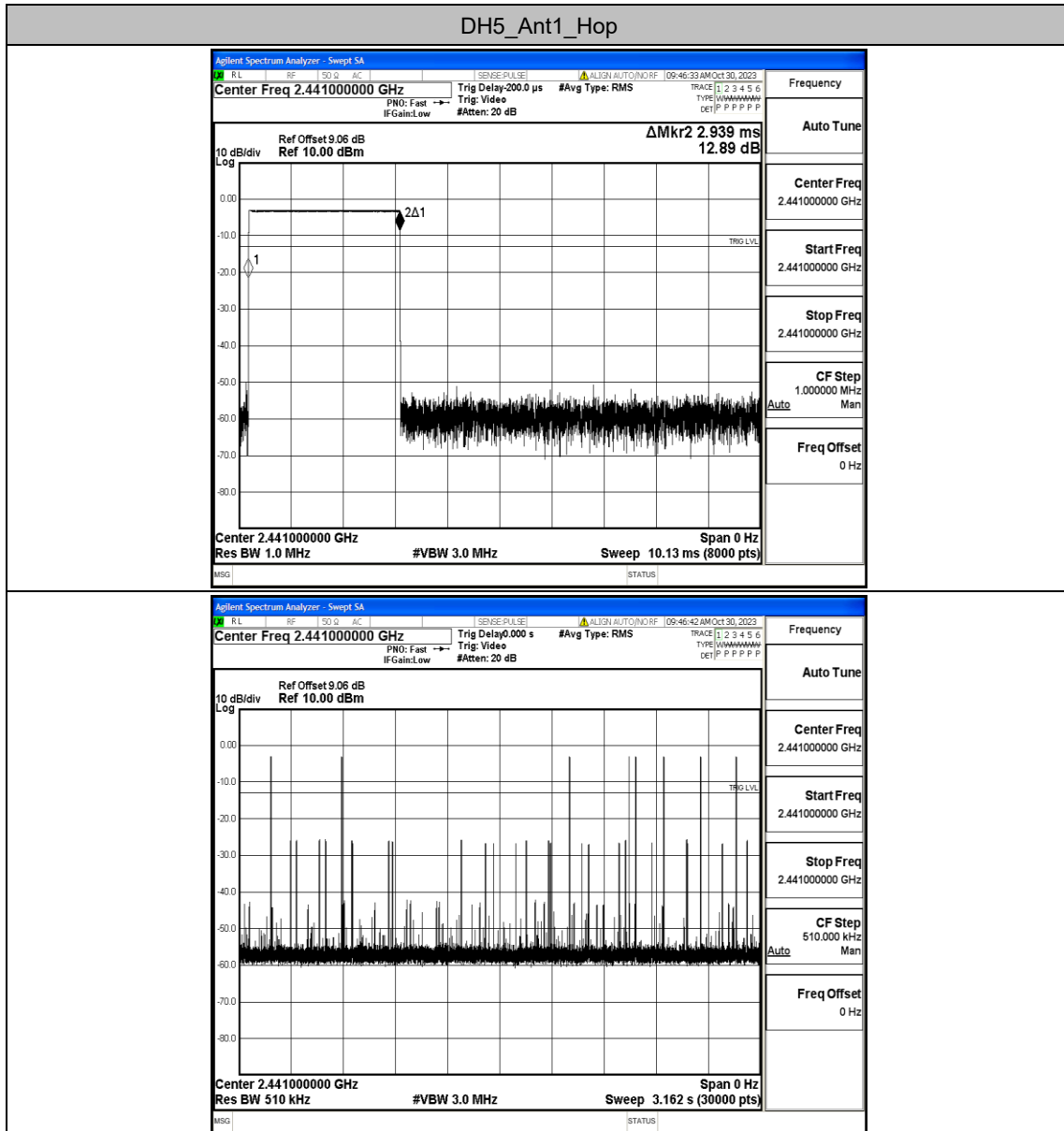


Appendix E: Time of occupancy

Test Result

TestMode	Antenna	Channel	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH5	Ant1	Hop	2.939	110	0.323	≤0.4	PASS

Test Graphs

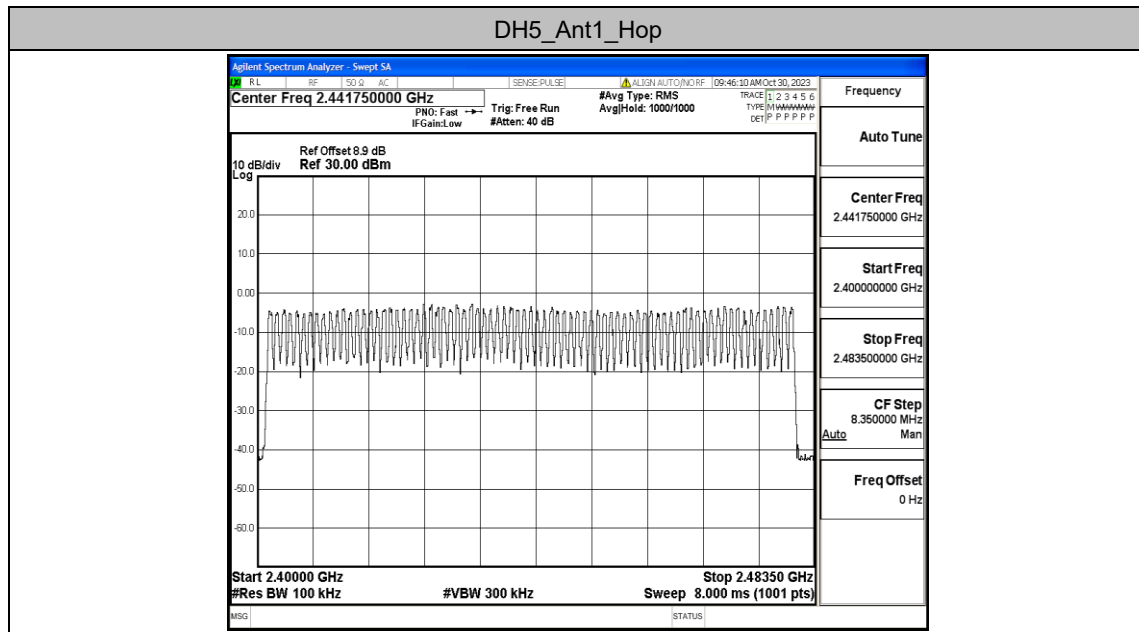


Appendix F: Number of hopping channels

Test Result

TestMode	Antenna	Channel	Result[Num]	Limit[Num]	Verdict
DH5	Ant1	Hop	79	≥15	PASS

Test Graphs



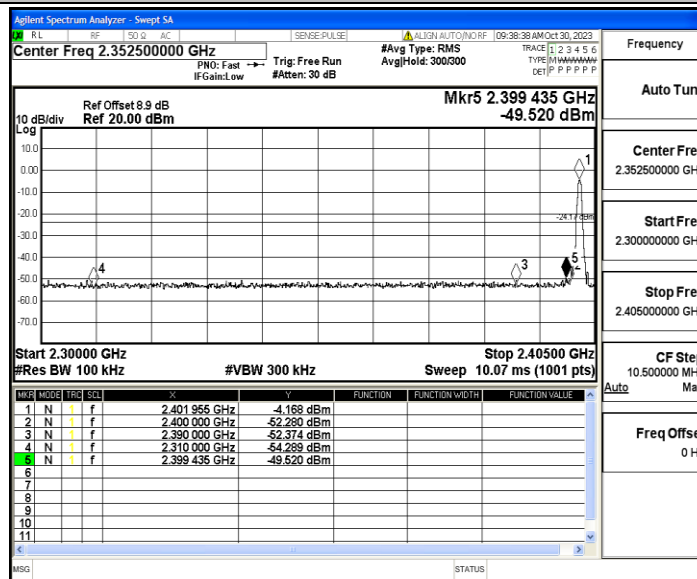
Appendix G: Band edge measurements

Test Result

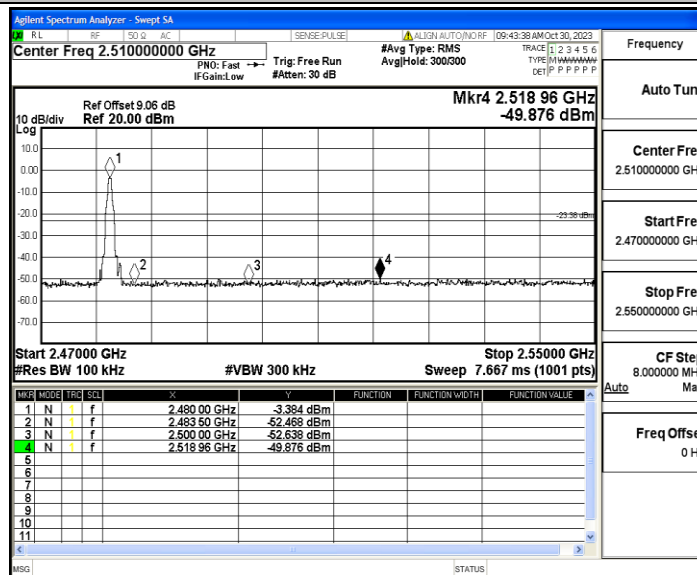
TestMode	Antenna	ChName	Channel	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	-4.17	-49.52	≤ -24.17	PASS
		High	2480	-3.38	-49.88	≤ -23.38	PASS
		Low	Hop_2402	-5.93	-50.8	≤ -25.93	PASS
		High	Hop_2480	-3.05	-48.8	≤ -23.05	PASS

Test Graphs

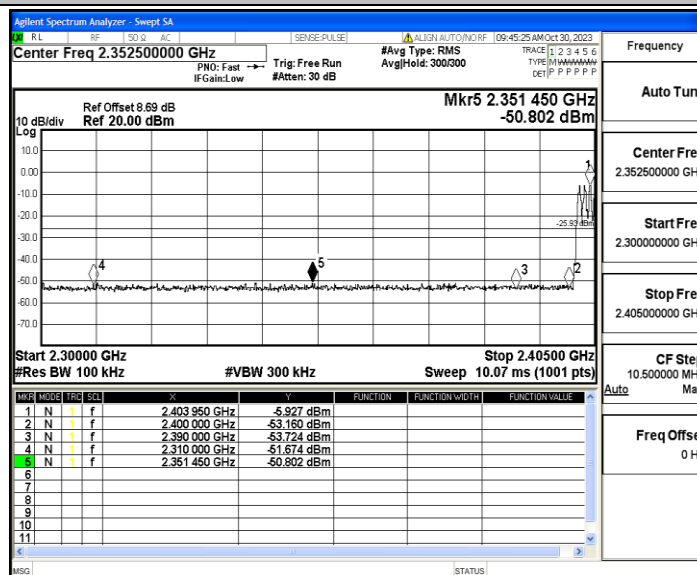
DH5_Ant1_Low_2402



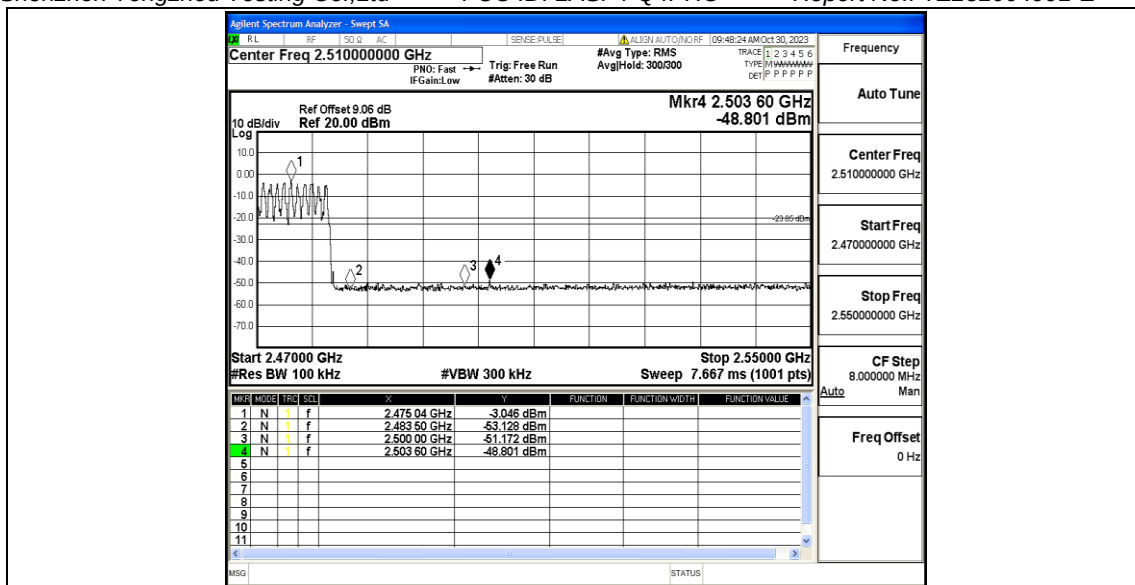
DH5_Ant1_High_2480



DH5_Ant1_Low_Hop_2402



DH5_Ant1_High_Hop_2480



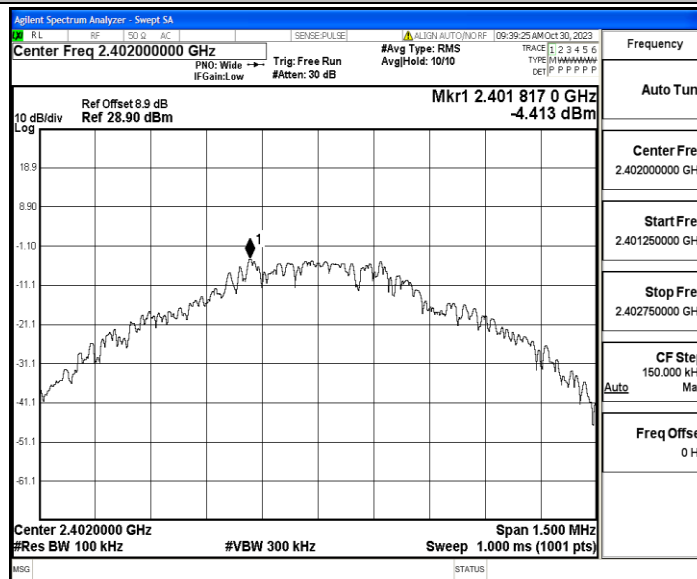
Appendix H: Conducted Spurious Emission

Test Result

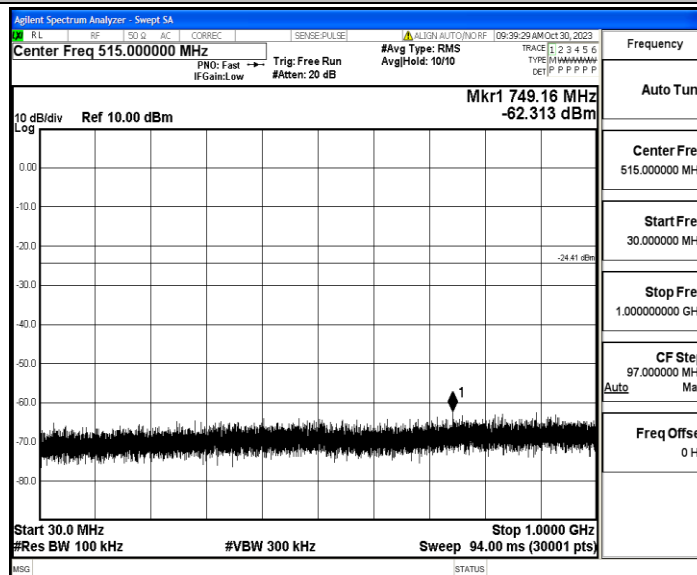
TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	Reference	-4.41	-4.41	---	PASS
			30~1000	-4.41	-62.31	≤-24.41	PASS
			1000~26500	-4.41	-50.78	≤-24.41	PASS
		2441	Reference	-4.03	-4.03	---	PASS
			30~1000	-4.03	-62.72	≤-24.03	PASS
			1000~26500	-4.03	-50.26	≤-24.03	PASS
		2480	Reference	-3.97	-3.97	---	PASS
			30~1000	-3.97	-62.23	≤-23.97	PASS
			1000~26500	-3.97	-49.81	≤-23.97	PASS

Test Graphs

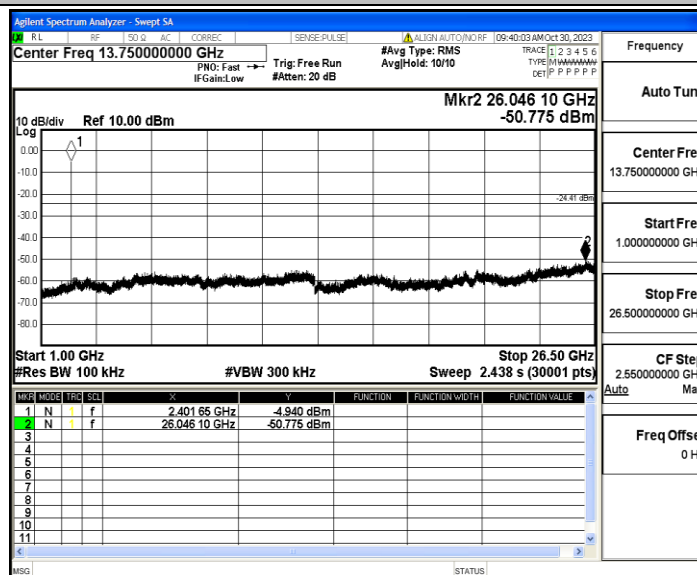
DH5_Ant1_2402_0~Reference



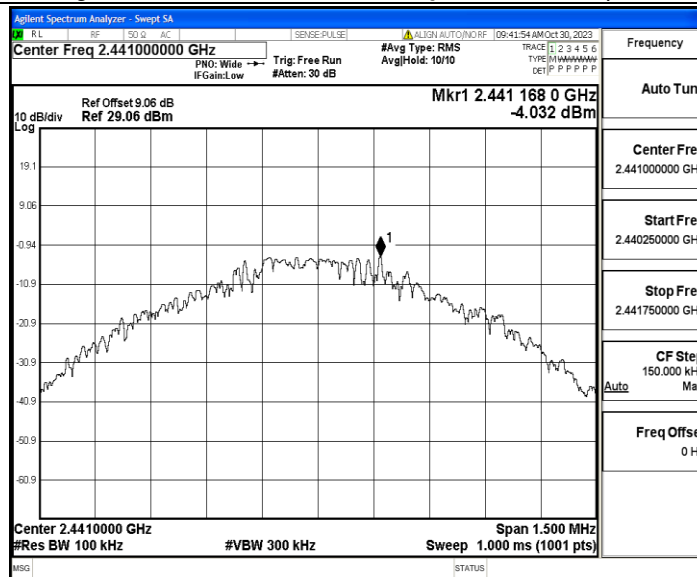
DH5_Ant1_2402_30~1000



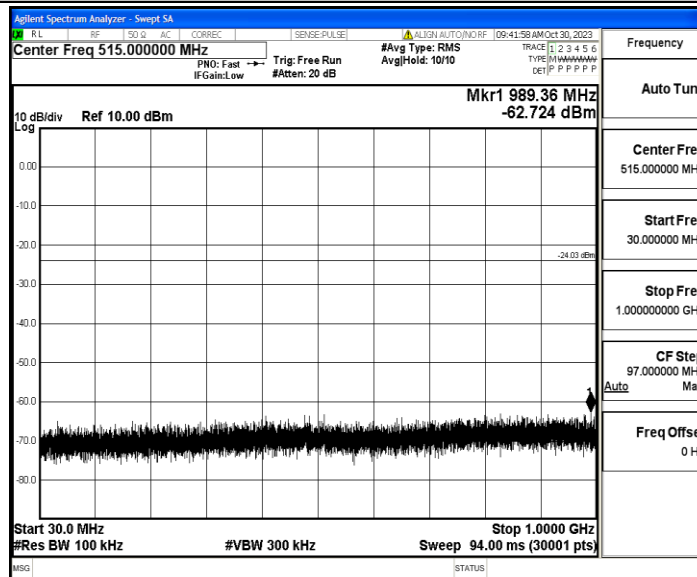
DH5_Ant1_2402_1000~26500



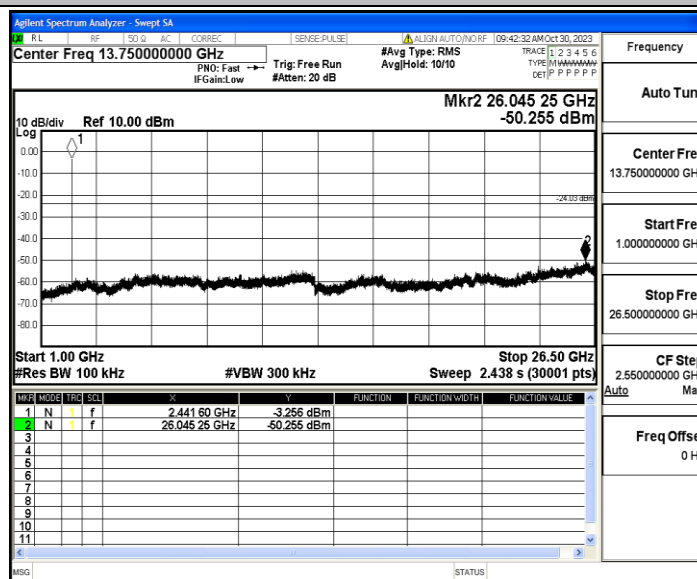
DH5_Ant1_2441_0~Reference



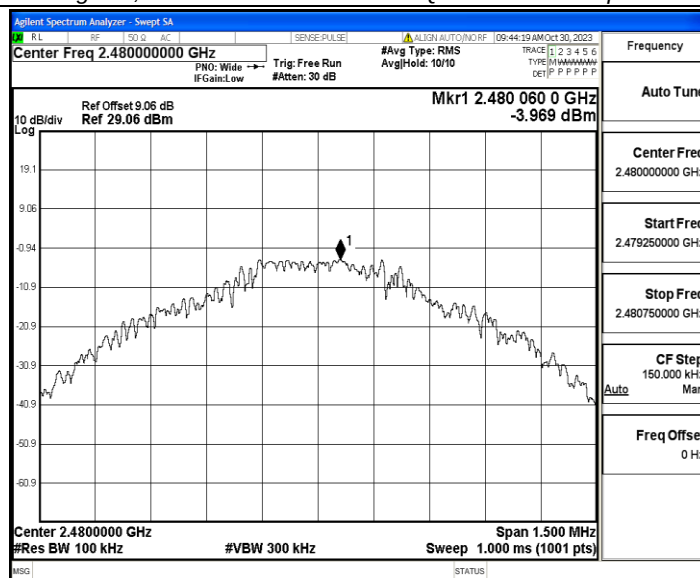
DH5_Ant1_2441_30~1000



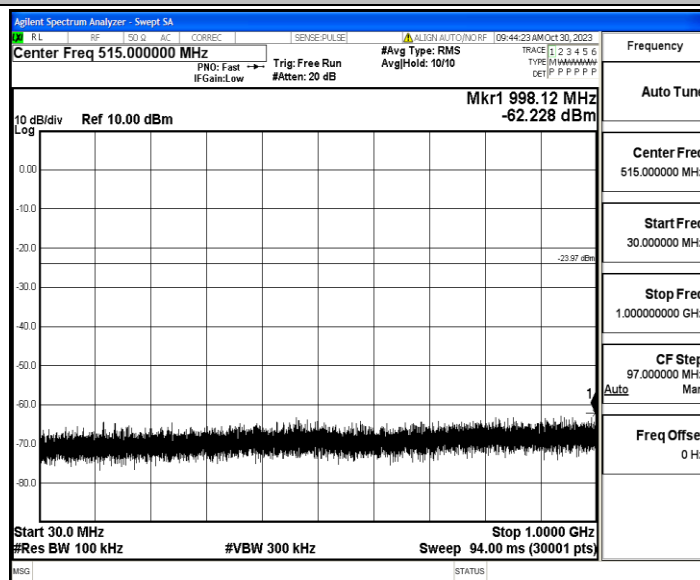
DH5_Ant1_2441_1000~26500



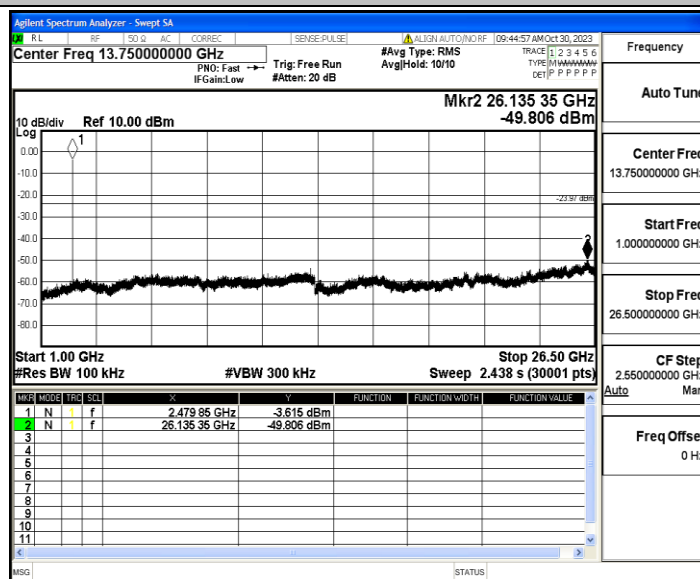
DH5_Ant1_2480_0~Reference



DH5_Ant1_2480_30~1000



DH5_Ant1_2480_1000~26500



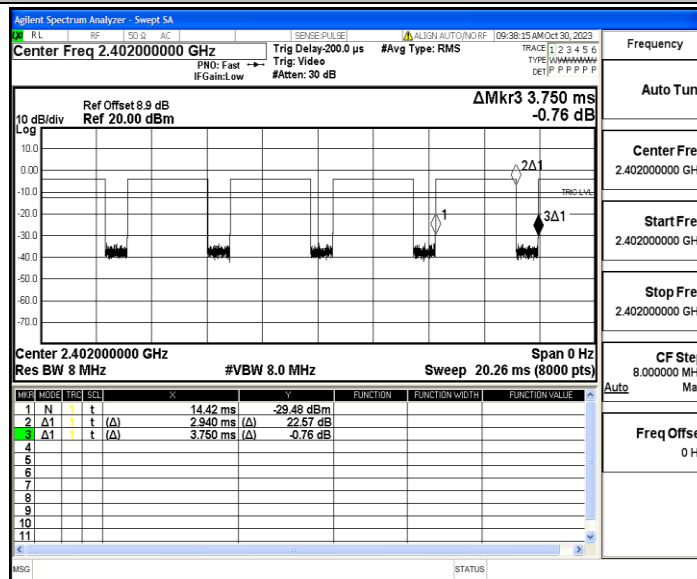
Appendix I: Duty Cycle

Test Result

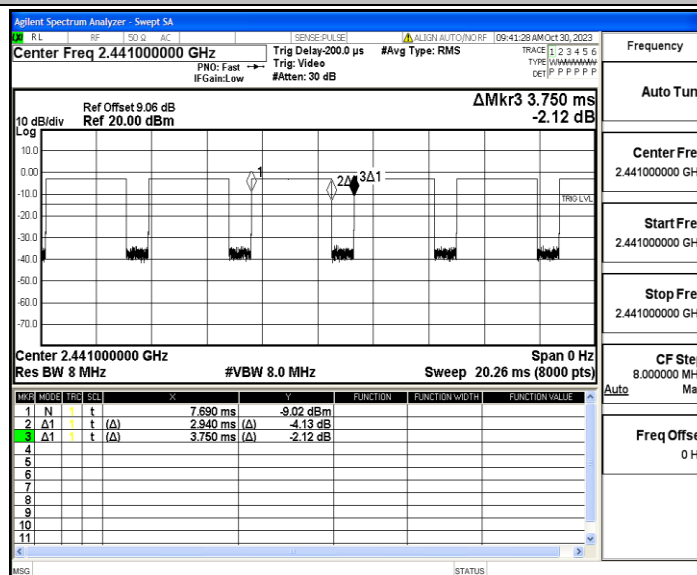
TestMode	Antenna	Channel	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	1/T[kHz]
DH5	Ant1	2402	2.94	3.75	78.40	0.34
		2441	2.94	3.75	78.40	0.34
		2480	2.94	3.75	78.40	0.34

Test Graphs

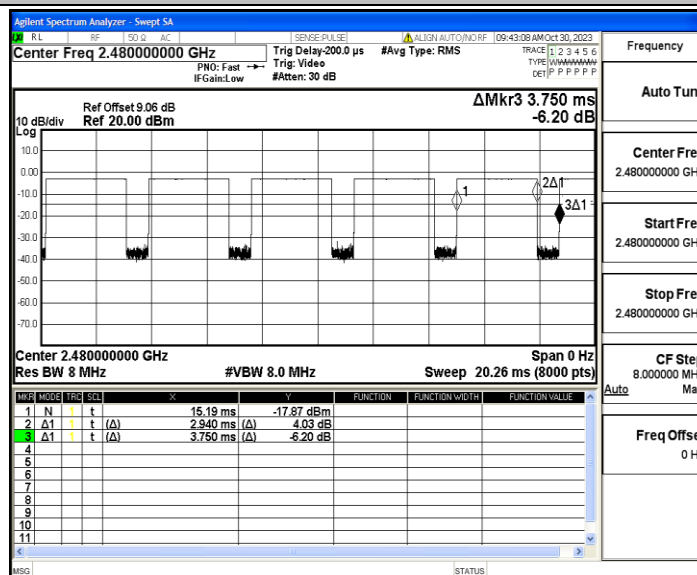
DH5_Ant1_2402



DH5_Ant1_2441



DH5_Ant1_2480



Appendix J: Emissions in Restricted Bands

Test Result

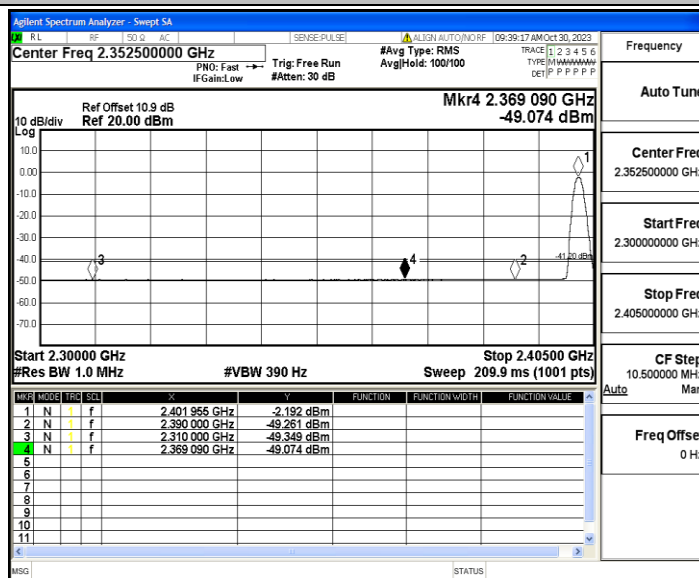
TestMode	Antenna	ChName	Channel	Detector	Freq(MHz)	Result(dBm)	Limit(dBm)	Verdict
DH5	Ant1	Low	2402	AV	2310.000	-49.35	≤-41.20	PASS
				AV	2369.090	-49.07	≤-41.20	PASS
				AV	2390.000	-49.26	≤-41.20	PASS
				Peak	2310.000	-42.38	≤-21.20	PASS
				Peak	2351.555	-39.46	≤-21.20	PASS
				Peak	2390.000	-41.83	≤-21.20	PASS
		High	2480	AV	2483.500	-48.52	≤-41.20	PASS
				AV	2499.280	-48.33	≤-41.20	PASS
				AV	2500.000	-48.46	≤-41.20	PASS
				Peak	2483.500	-40.99	≤-21.20	PASS
				Peak	2485.920	-38.41	≤-21.20	PASS
				Peak	2500.000	-40.88	≤-21.20	PASS

Note:

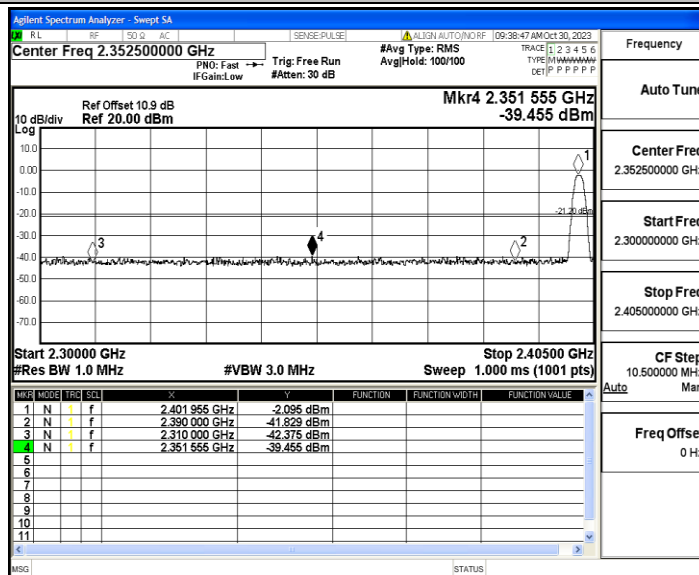
1. The Antenna Gain is compensated in the graph with 2dBi and Antenna Gain which is Higher.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

Test Graphs

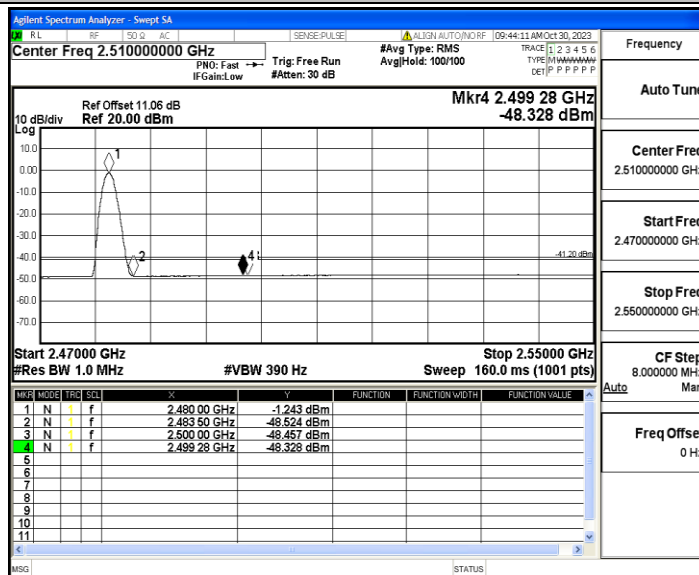
DH5_Ant1_Low_2402_AV



DH5_Ant1_Low_2402_Peak



DH5_Ant1_High_2480_AV



DH5_Ant1_High_2480_Peak

