

RF Test Data for BT(BDR/EDR) (Conducted Measurement)**Product Name: True Wireless Earbuds****Trade Mark: Tranya****Test Model: F1****FCC ID: 2A4AX-F1****Environmental Conditions**

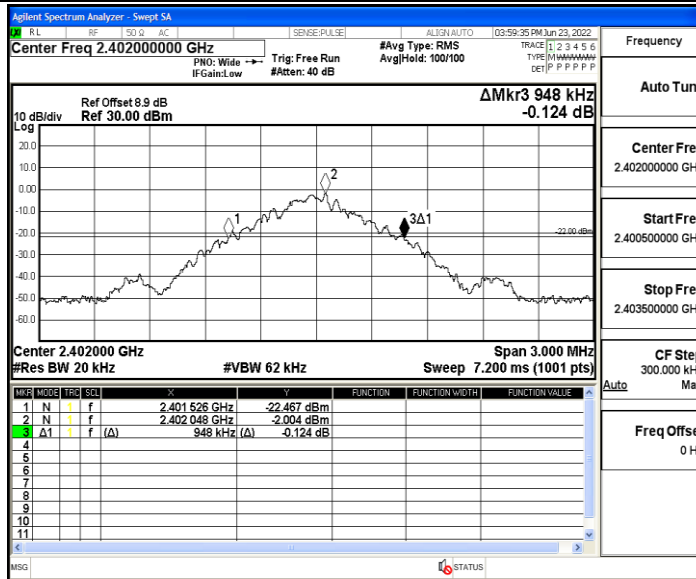
Temperature:	25.5°C
Relative Humidity:	55%
ATM Pressure:	100.0 kPa
Test Engineer:	Anna Hu
Supervised by:	Hugo Chen
NOTE	N/A

Appendix A: 20dB Emission Bandwidth**Test Result**

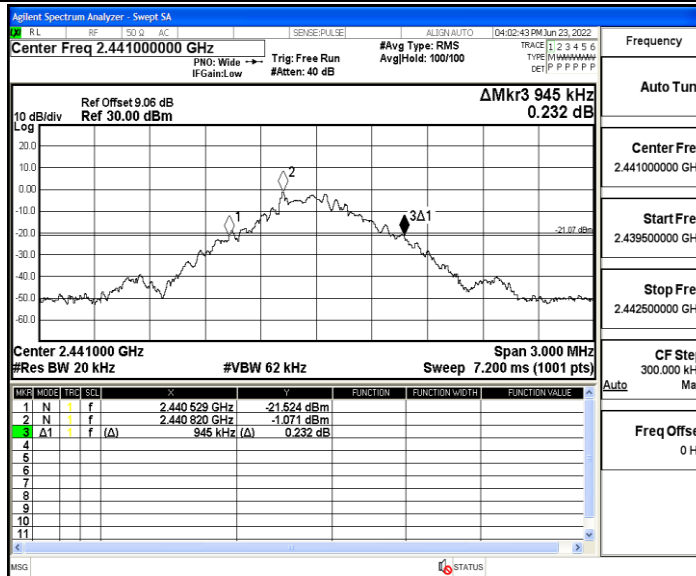
TestMode	Antenna	Channel	20db EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.948	2401.526	2402.474	---	---
		2441	0.945	2440.529	2441.474	---	---
		2480	0.954	2479.523	2480.477	---	---
2DH5	Ant1	2402	1.317	2401.331	2402.648	---	---
		2441	1.203	2440.388	2441.591	---	---
		2480	1.203	2479.388	2480.591	---	---
3DH5	Ant1	2402	1.182	2401.406	2402.588	---	---
		2441	1.236	2440.364	2441.600	---	---
		2480	1.239	2479.358	2480.597	---	---

Test Graphs

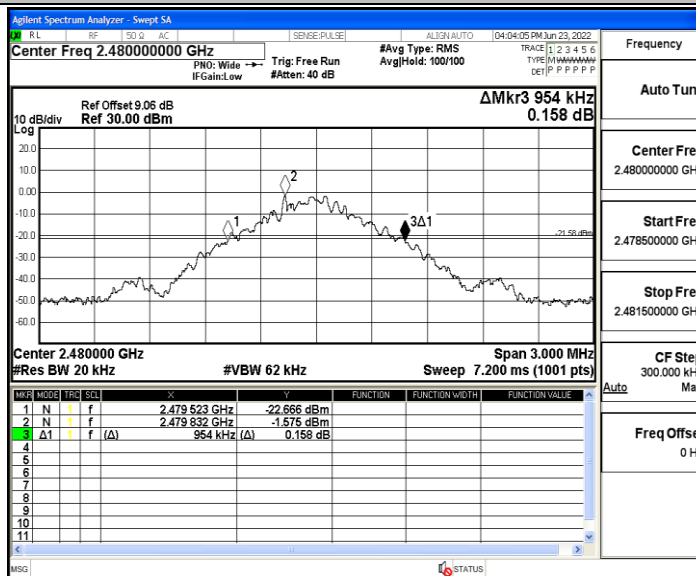
DH5_Ant1_2402



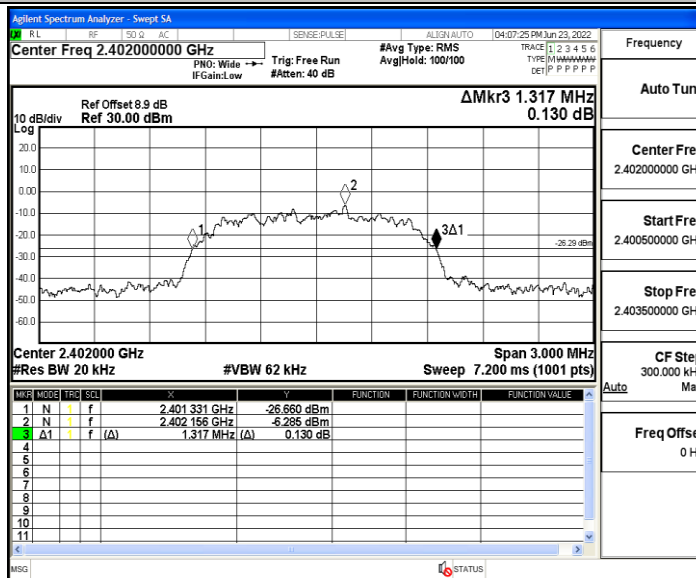
DH5_Ant1_2441



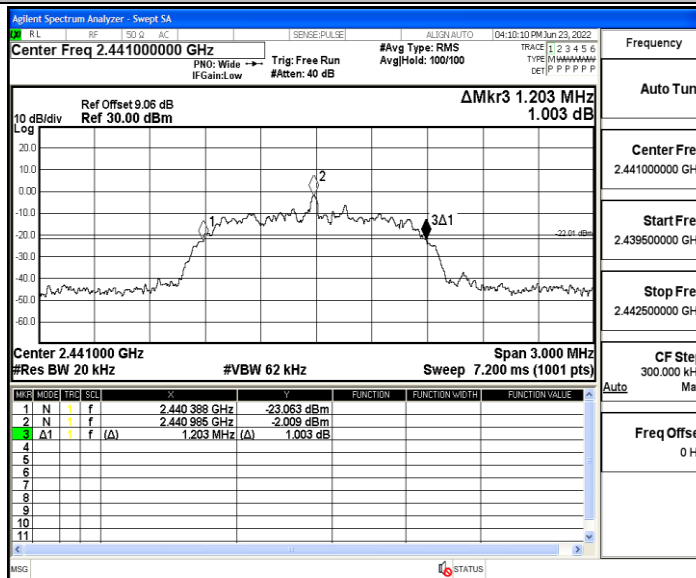
DH5_Ant1_2480



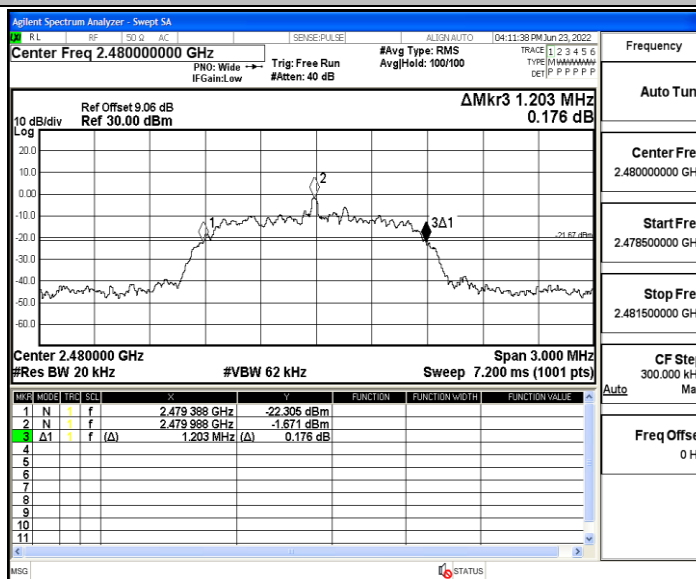
2DH5_Ant1_2402



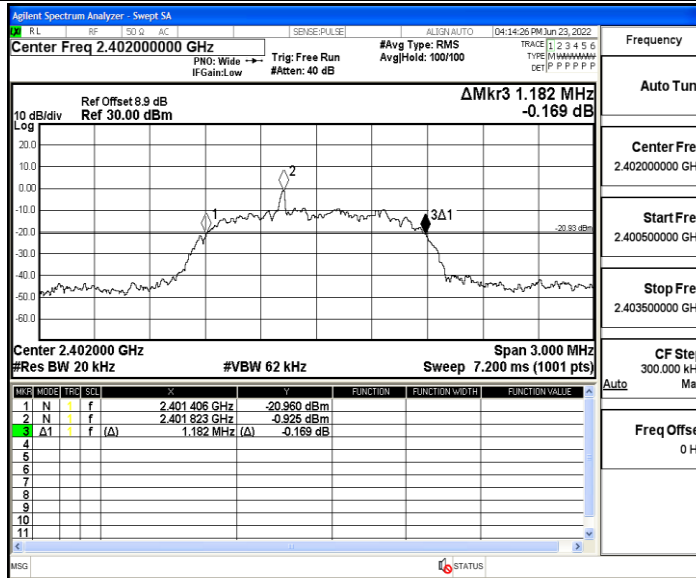
2DH5_Ant1_2441



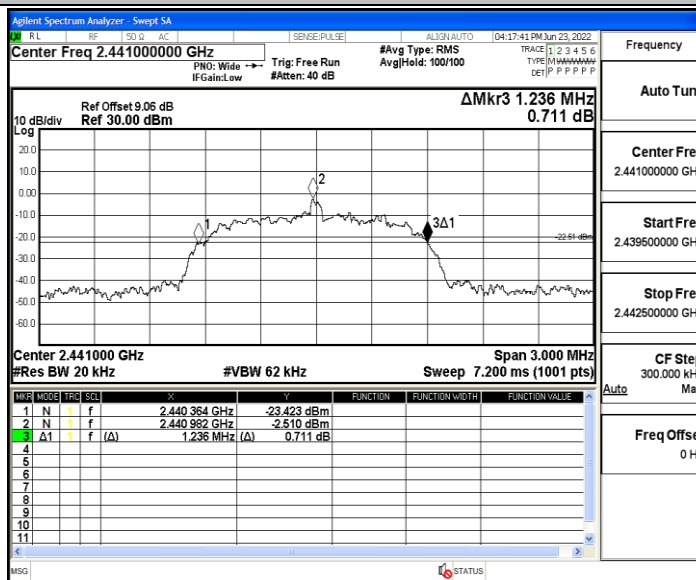
2DH5_Ant1_2480



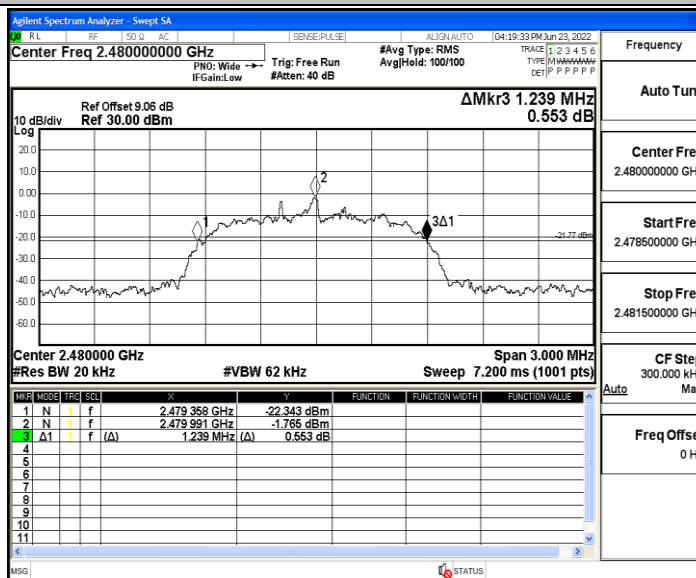
3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480



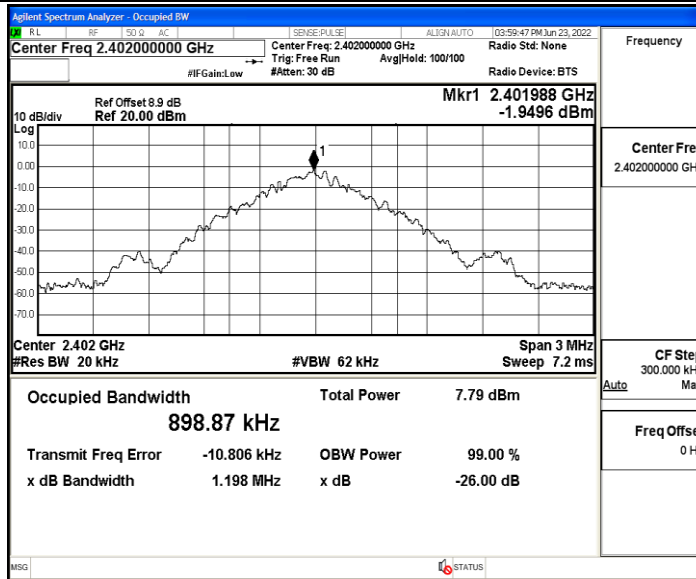
Appendix B: Occupied Channel Bandwidth

Test Result

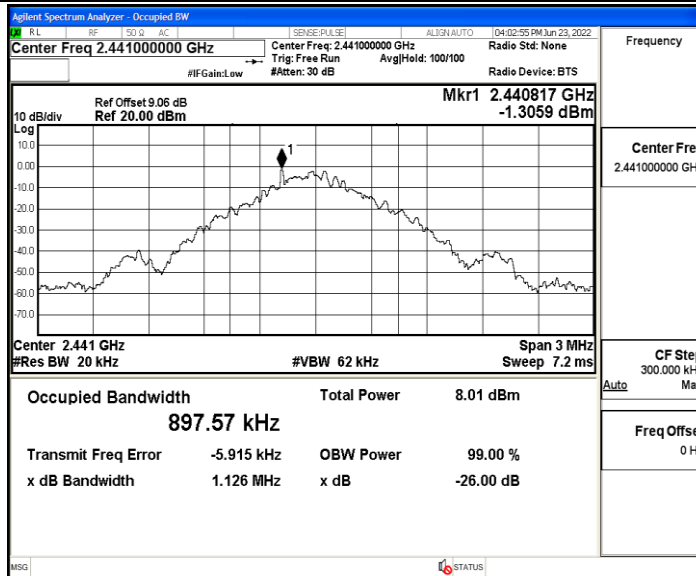
TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.89887	2401.540	2402.439	---	---
		2441	0.89757	2440.545	2441.443	---	---
		2480	0.89125	2479.543	2480.435	---	---
2DH5	Ant1	2402	1.1596	2401.406	2402.565	---	---
		2441	1.1576	2440.407	2441.565	---	---
		2480	1.1605	2479.406	2480.566	---	---
3DH5	Ant1	2402	1.1493	2401.414	2402.564	---	---
		2441	1.1720	2440.400	2441.572	---	---
		2480	1.1636	2479.405	2480.569	---	---

Test Graphs

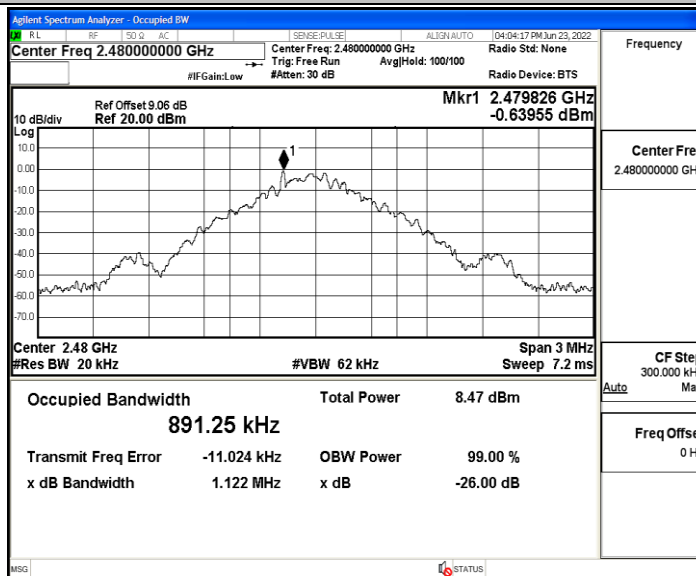
DH5_Ant1_2402



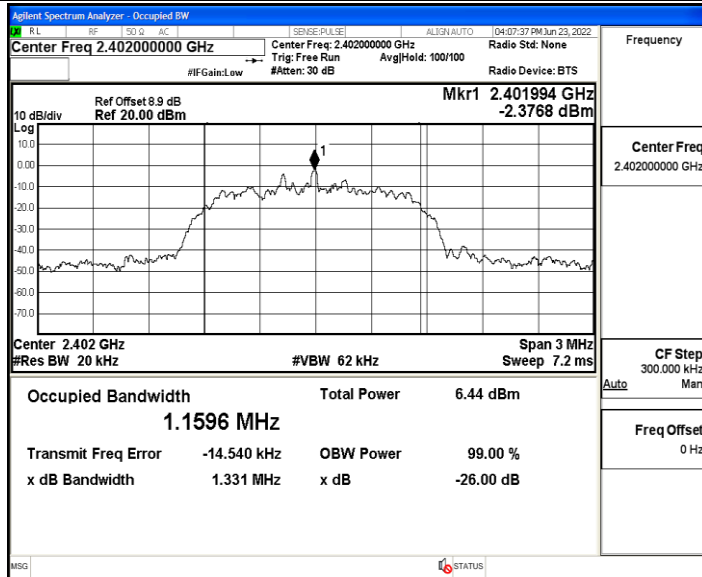
DH5_Ant1_2441



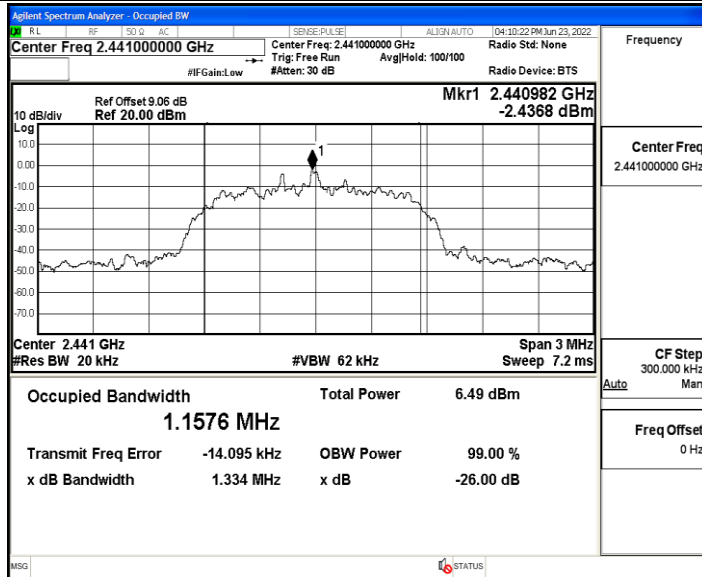
DH5_Ant1_2480



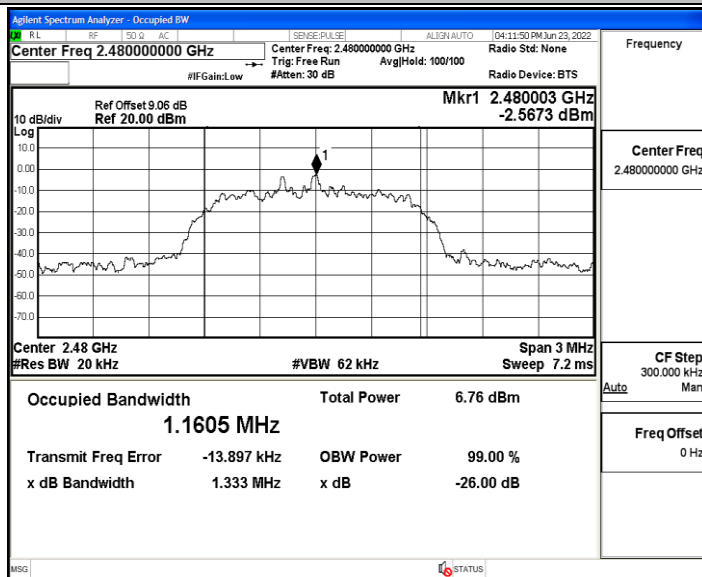
2DH5_Ant1_2402



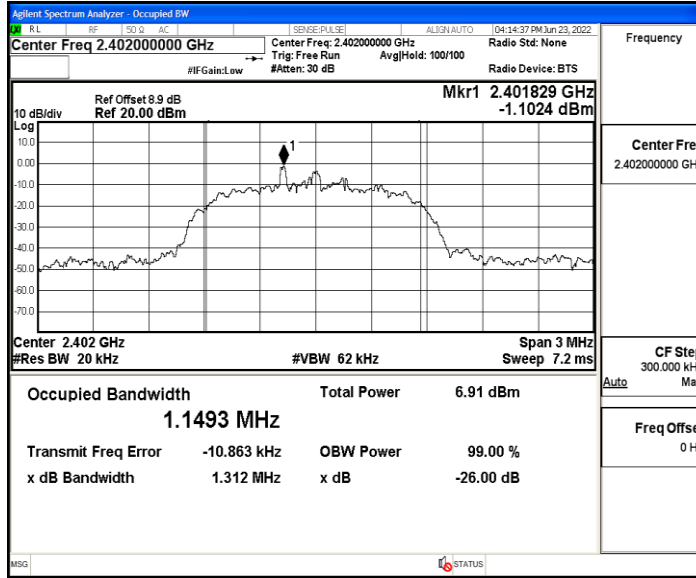
2DH5_Ant1_2441



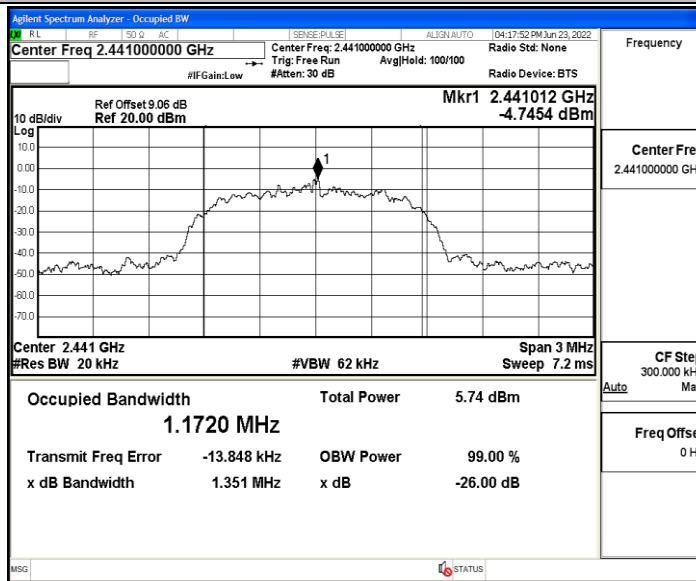
2DH5_Ant1_2480



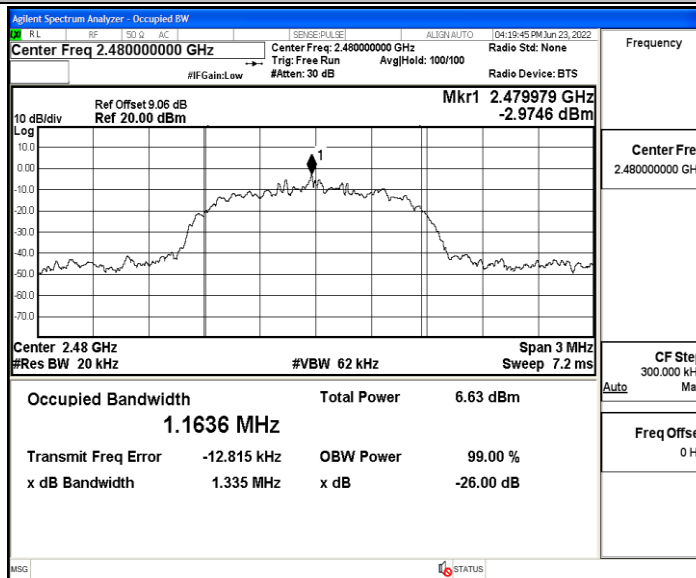
3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480



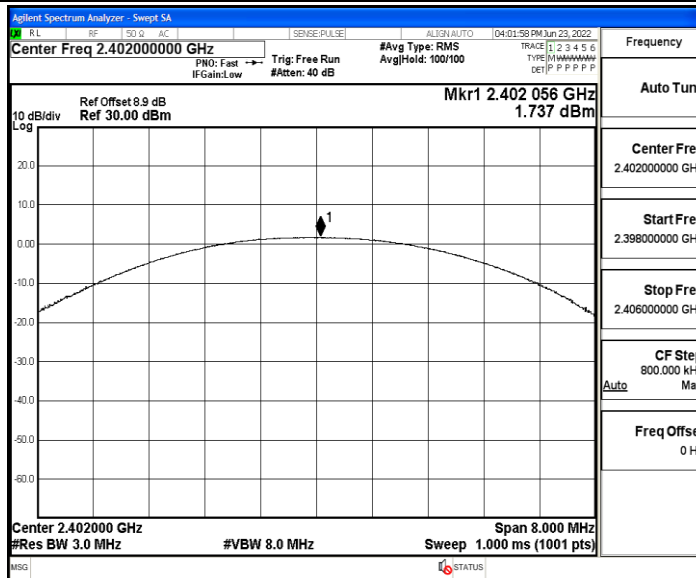
Appendix C: Maximum conducted output power

Test Result

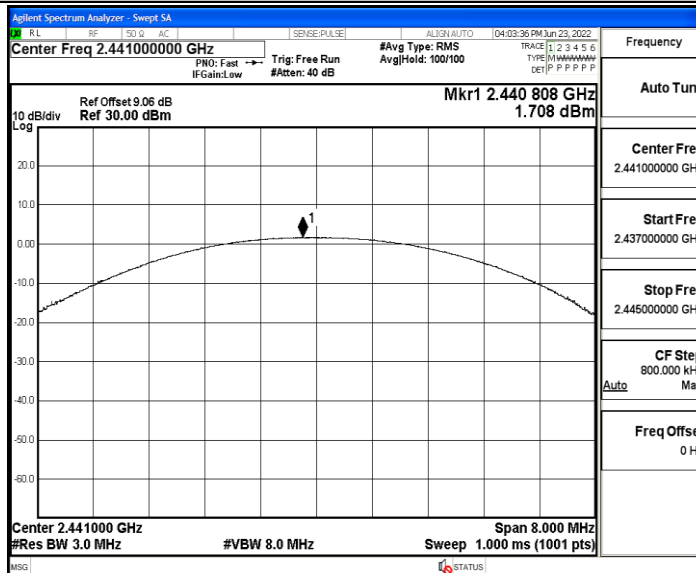
TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
DH5	Ant1	2402	1.74	≤30	PASS
		2441	1.71	≤30	PASS
		2480	2.05	≤30	PASS
2DH5	Ant1	2402	1.68	≤20.97	PASS
		2441	1.7	≤20.97	PASS
		2480	2.03	≤20.97	PASS
3DH5	Ant1	2402	2.04	≤20.97	PASS
		2441	2.02	≤20.97	PASS
		2480	2.28	≤20.97	PASS

Test Graphs

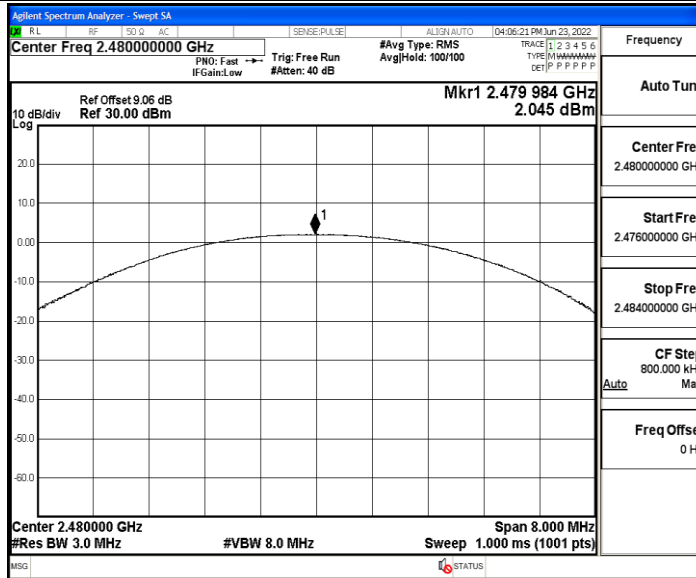
DH5_Ant1_2402



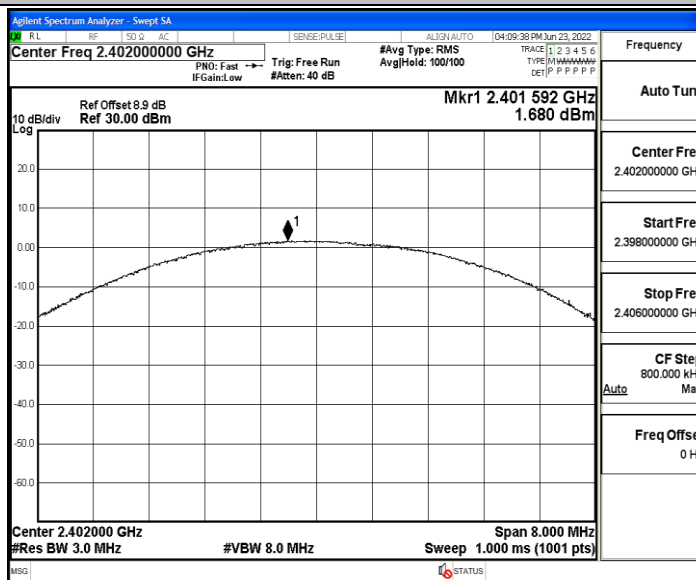
DH5_Ant1_2441



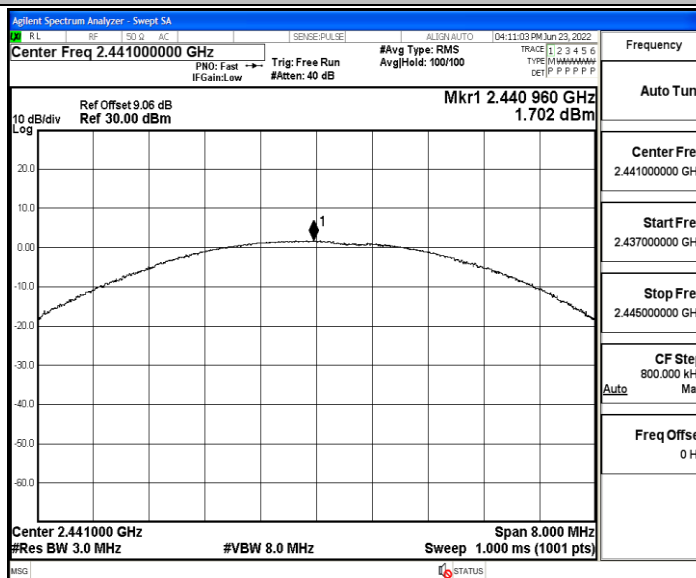
DH5_Ant1_2480



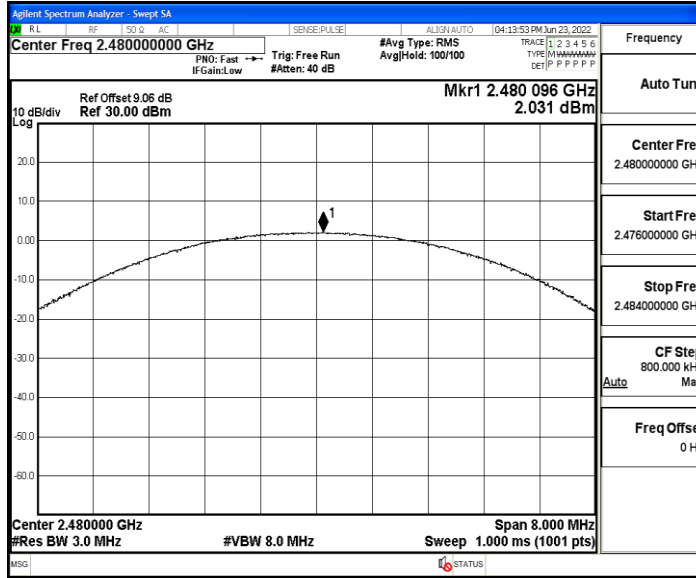
2DH5_Ant1_2402



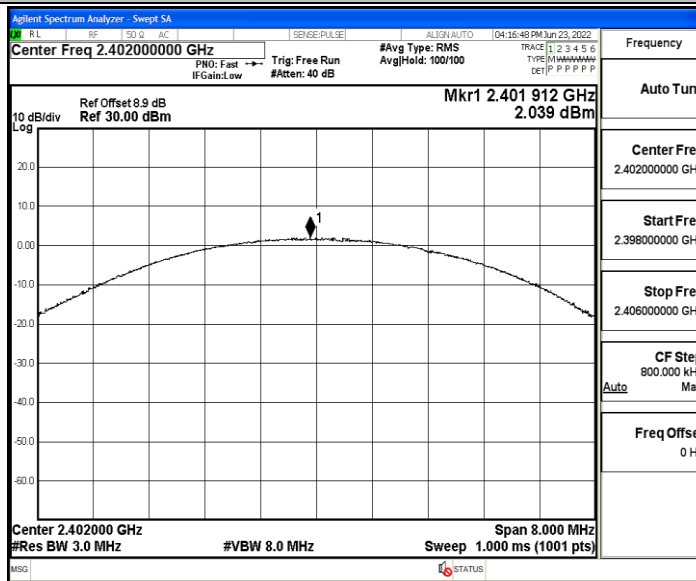
2DH5_Ant1_2441



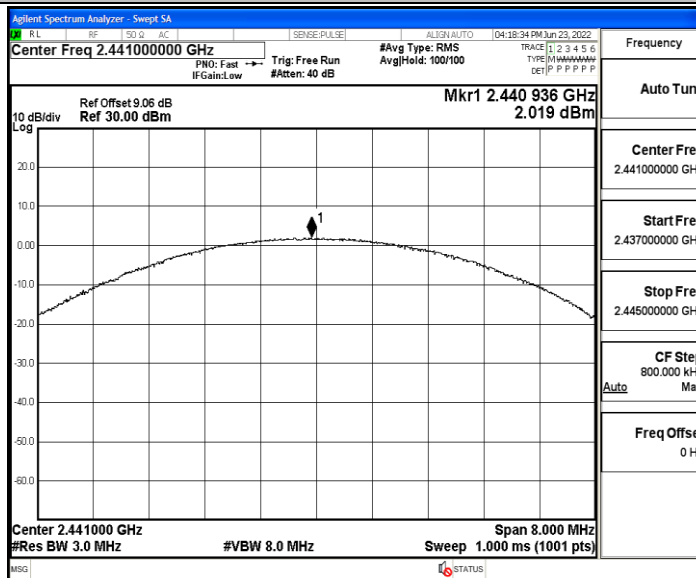
2DH5_Ant1_2480



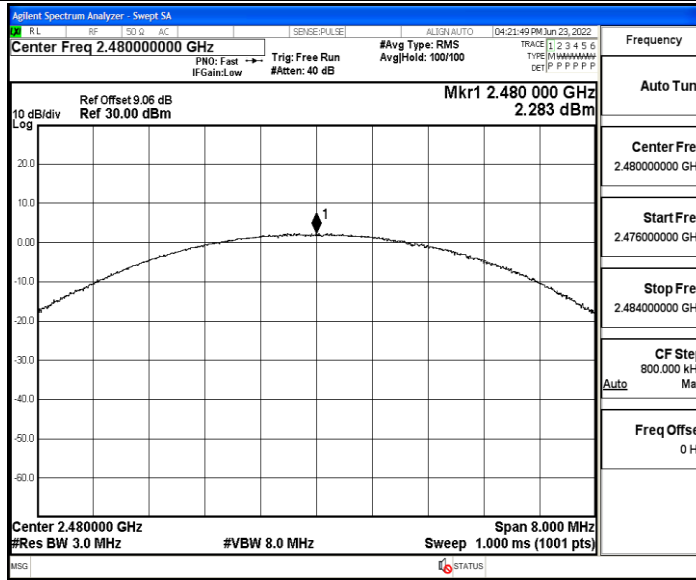
3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480



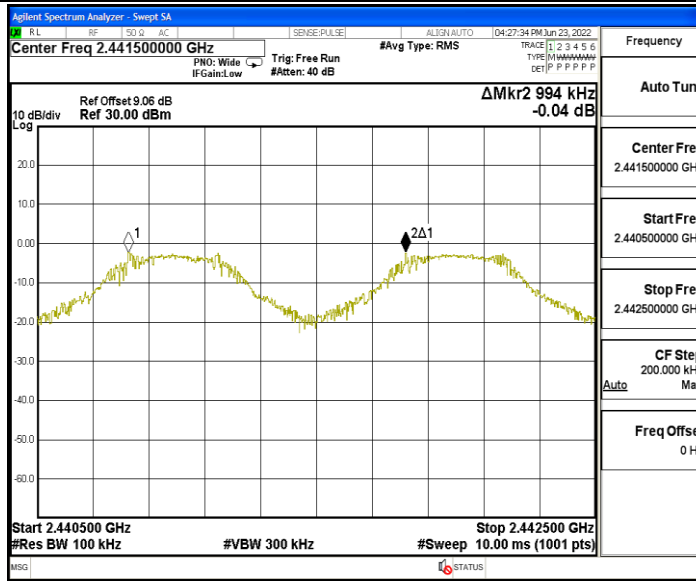
Appendix D: Carrier frequency separation

Test Result

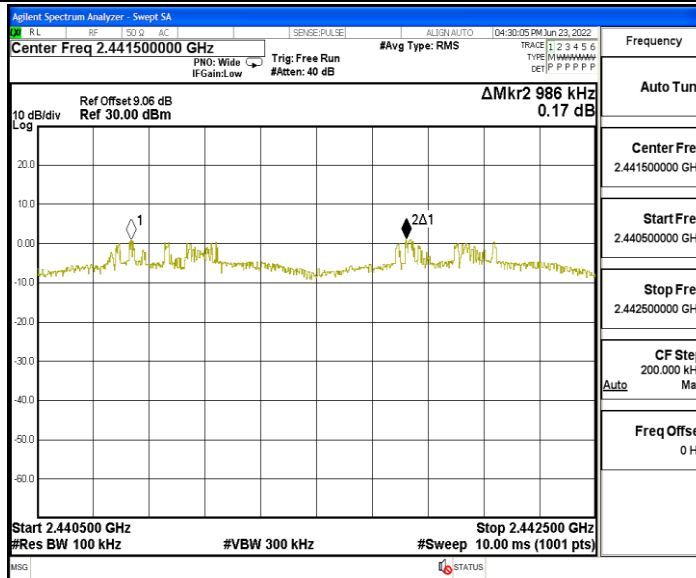
TestMode	Antenna	Channel	Result[MHz]	Limit[MHz]	Verdict
DH5	Ant1	Hop	0.994	≥ 0.954	PASS
2DH5	Ant1	Hop	0.986	≥ 0.878	PASS
3DH5	Ant1	Hop	1	≥ 0.826	PASS

Test Graphs

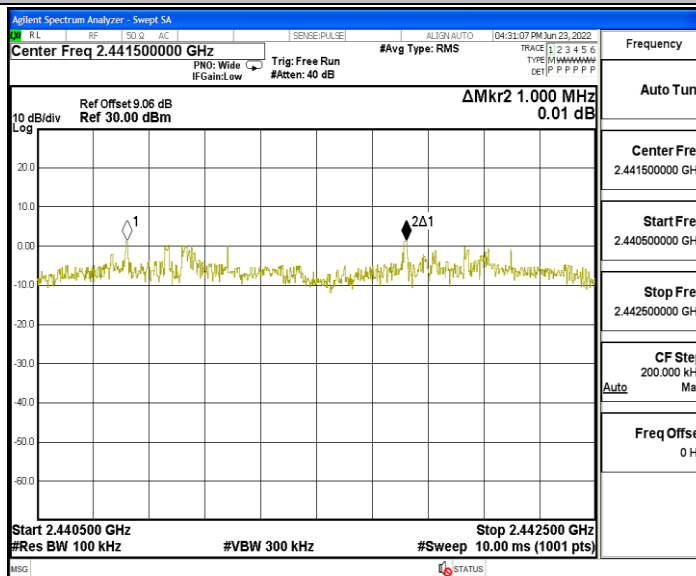
DH5_Ant1_Hop



2DH5_Ant1_Hop



3DH5_Ant1_Hop



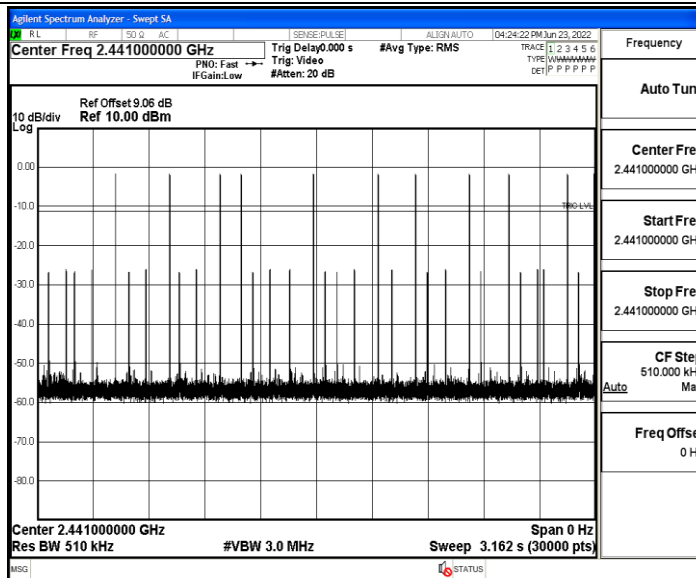
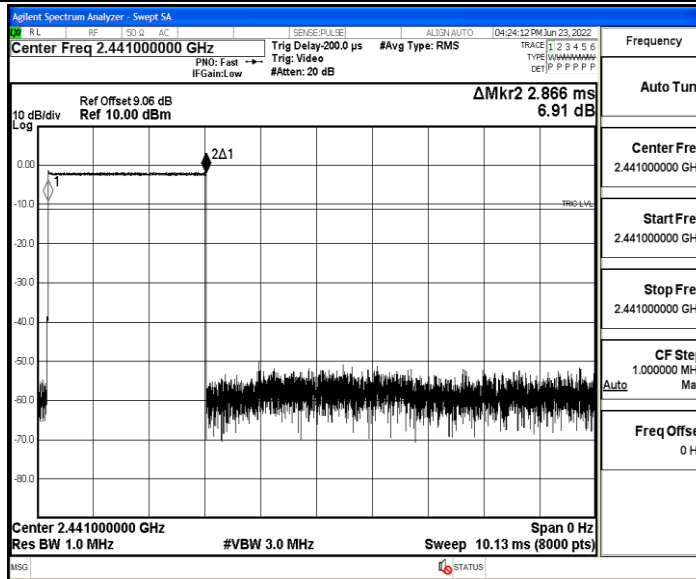
Appendix E: Time of occupancy

Test Result

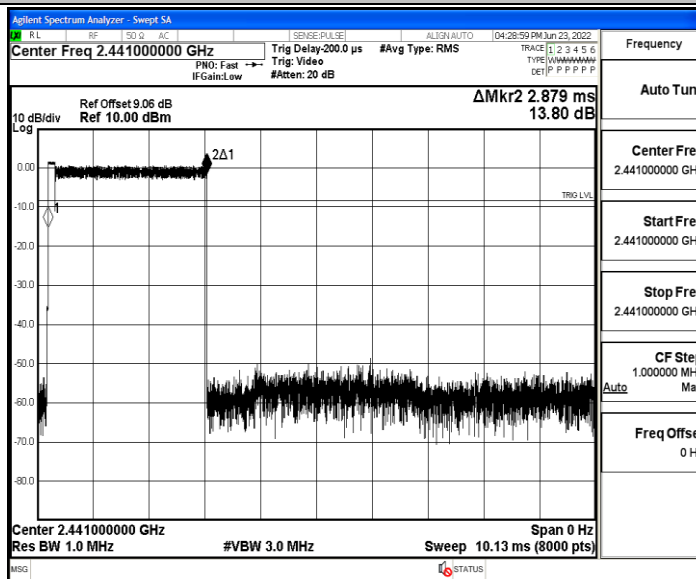
TestMode	Antenna	Channel	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH5	Ant1	Hop	2.87	120	0.344	≤0.4	PASS
2DH5	Ant1	Hop	2.88	120	0.345	≤0.4	PASS
3DH5	Ant1	Hop	2.88	110	0.317	≤0.4	PASS

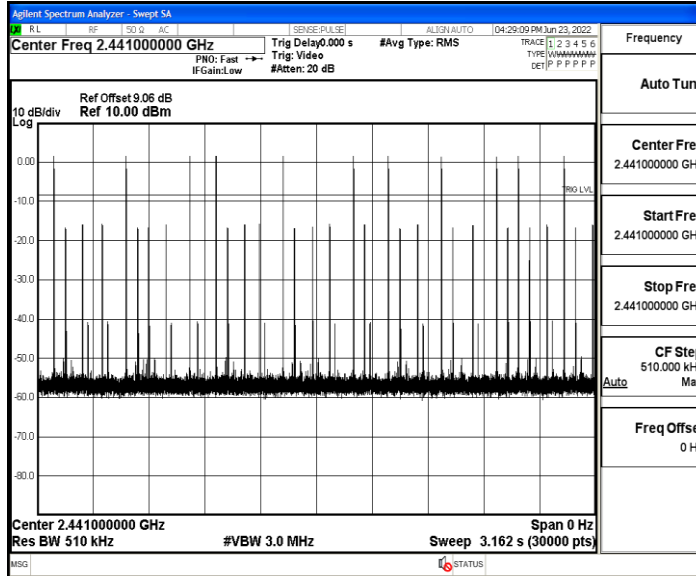
Test Graphs

DH5_Ant1_Hop

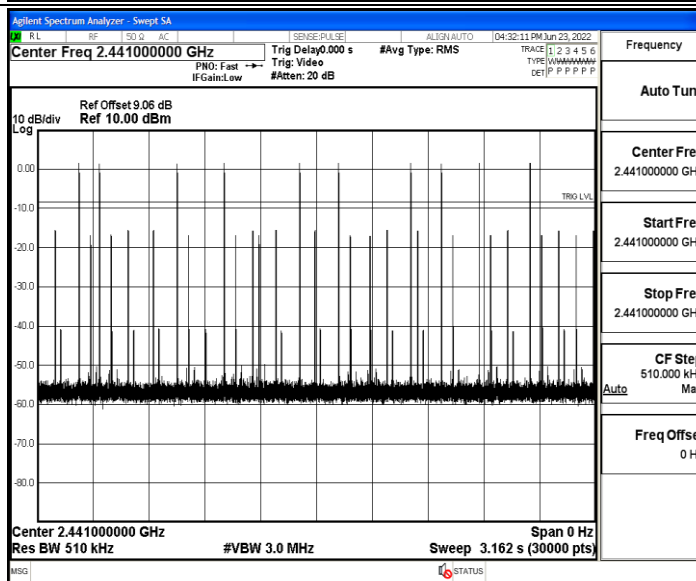
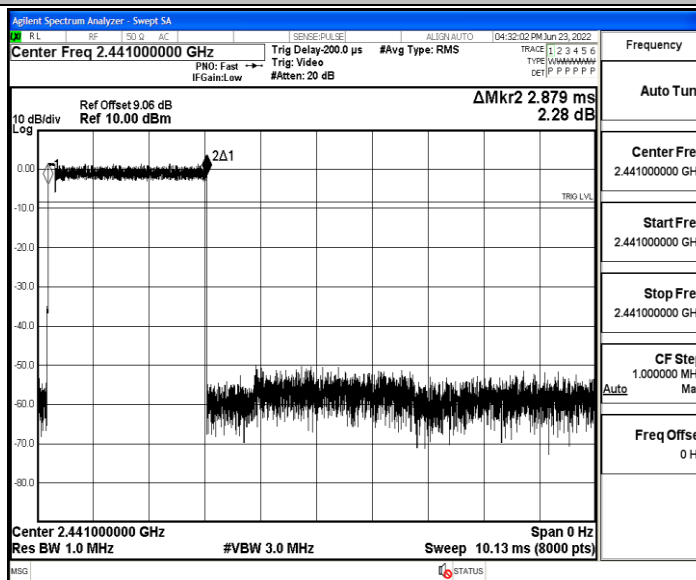


2DH5_Ant1_Hop





3DH5_Ant1_Hop



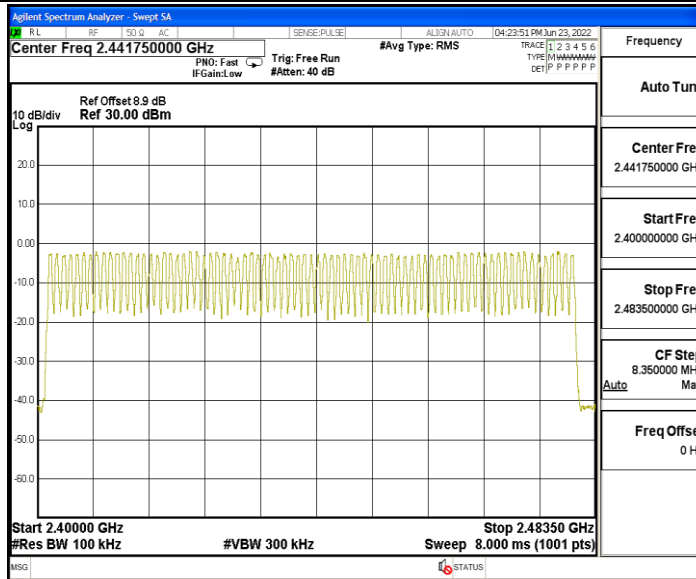
Appendix F: Number of hopping channels

Test Result

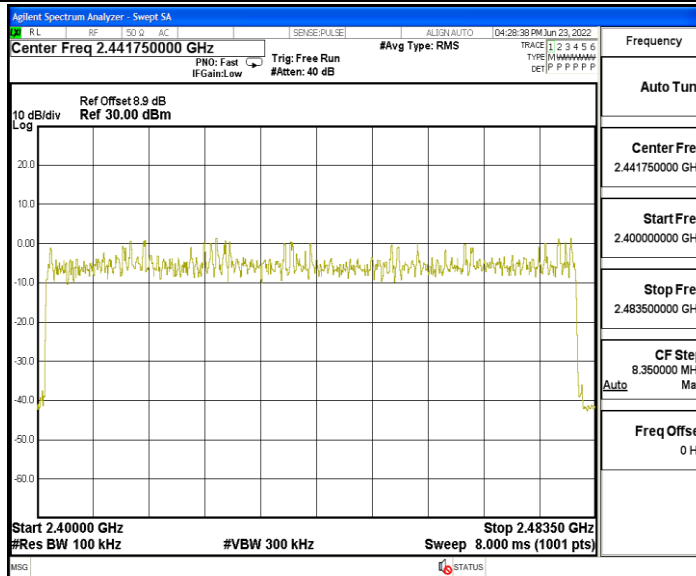
TestMode	Antenna	Channel	Result[Num]	Limit[Num]	Verdict
DH5	Ant1	Hop	79	≥15	PASS
2DH5	Ant1	Hop	79	≥15	PASS
3DH5	Ant1	Hop	79	≥15	PASS

Test Graphs

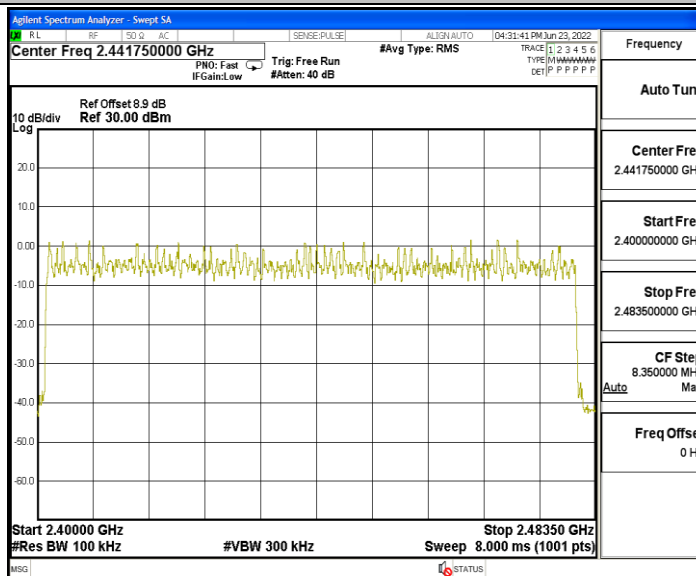
DH5_Ant1_Hop



2DH5_Ant1_Hop



3DH5_Ant1_Hop



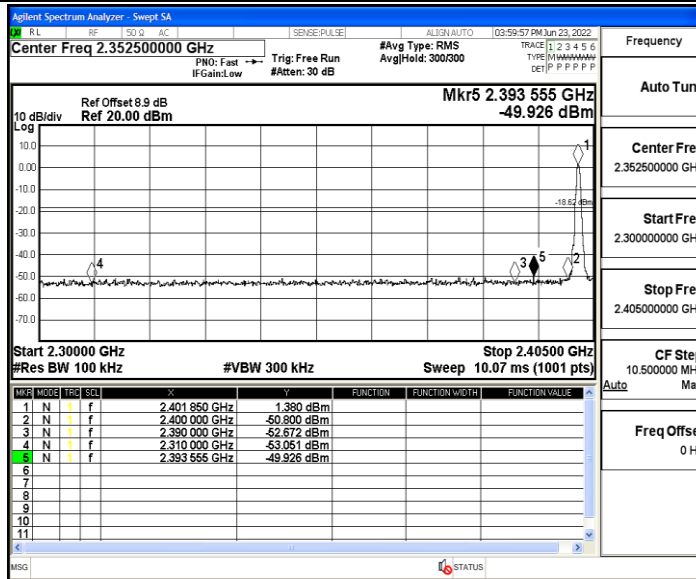
Appendix G: Band edge measurements

Test Result

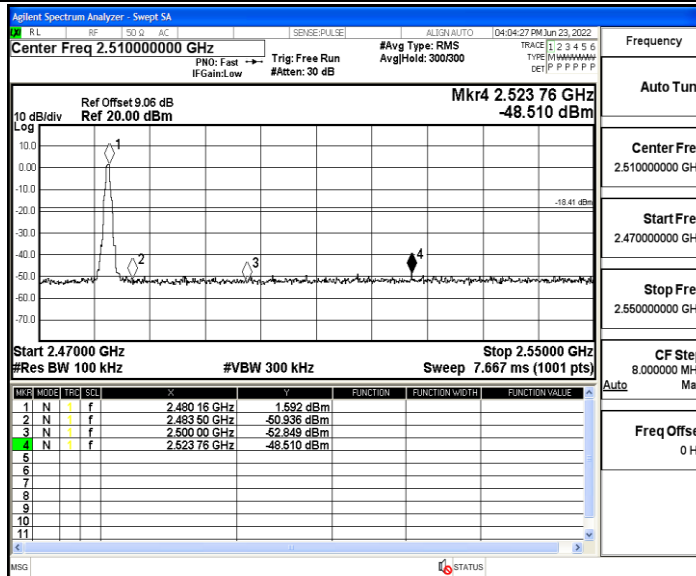
TestMode	Antenna	ChName	Channel	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	1.38	-49.93	≤ -18.62	PASS
		High	2480	1.59	-48.51	≤ -18.41	PASS
		Low	Hop_2402	-3.44	-50.14	≤ -23.44	PASS
		High	Hop_2480	-2.29	-49.59	≤ -22.29	PASS
2DH5	Ant1	Low	2402	0.90	-48.11	≤ -19.1	PASS
		High	2480	1.29	-48.81	≤ -18.72	PASS
		Low	Hop_2402	-4.32	-50.75	≤ -24.32	PASS
		High	Hop_2480	-3.39	-49.61	≤ -23.39	PASS
3DH5	Ant1	Low	2402	1.33	-48.96	≤ -18.67	PASS
		High	2480	1.71	-49.22	≤ -18.29	PASS
		Low	Hop_2402	-3.79	-50.65	≤ -23.79	PASS
		High	Hop_2480	1.39	-47.61	≤ -18.61	PASS

Test Graphs

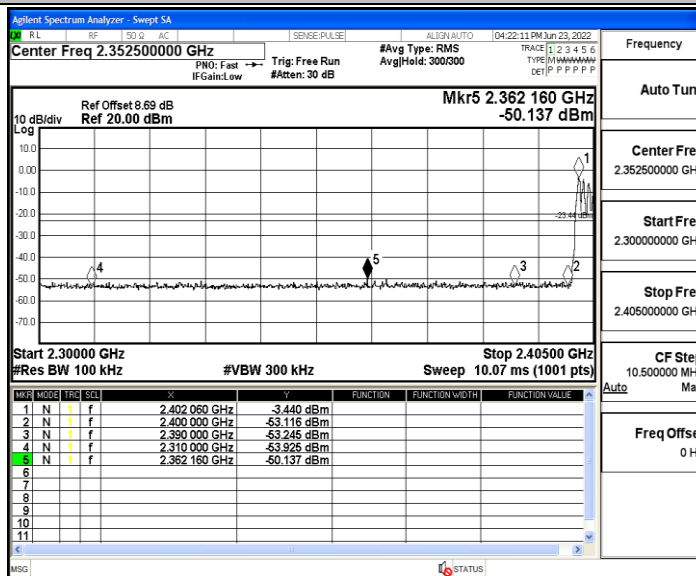
DH5_Ant1_Low_2402



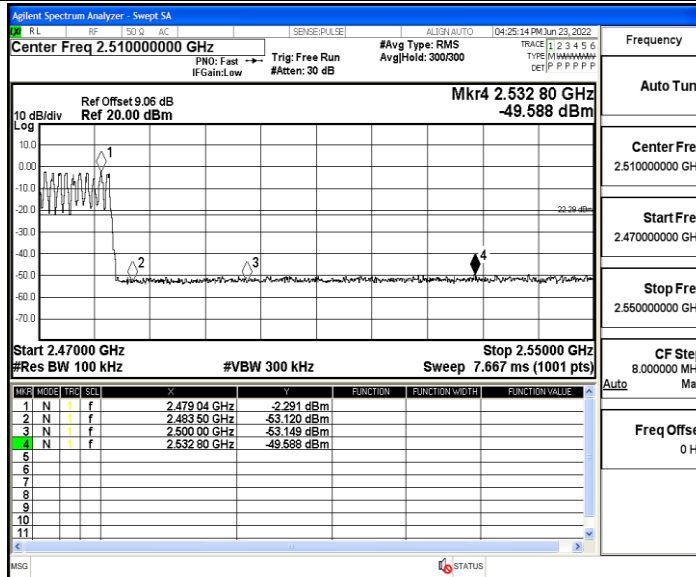
DH5_Ant1_High_2480



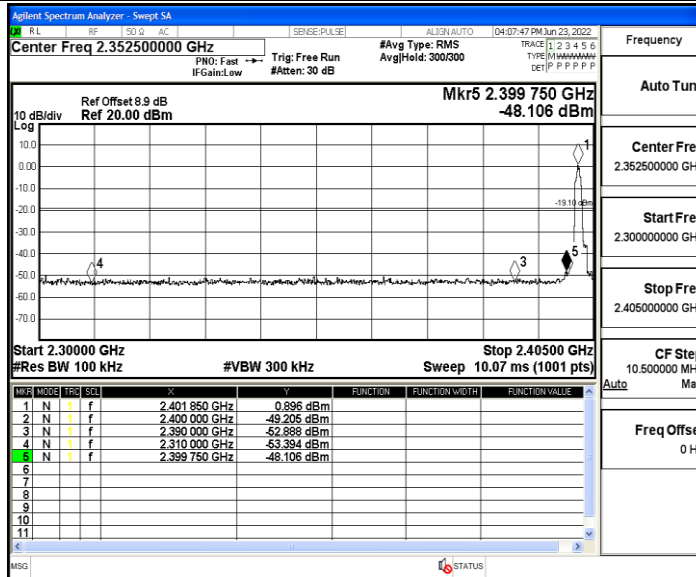
DH5_Ant1_Low_Hop_2402



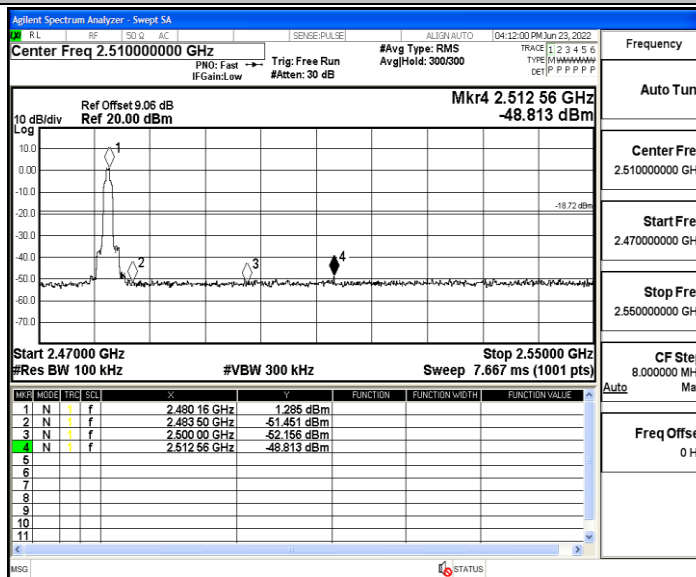
DH5_Ant1_High_Hop_2480



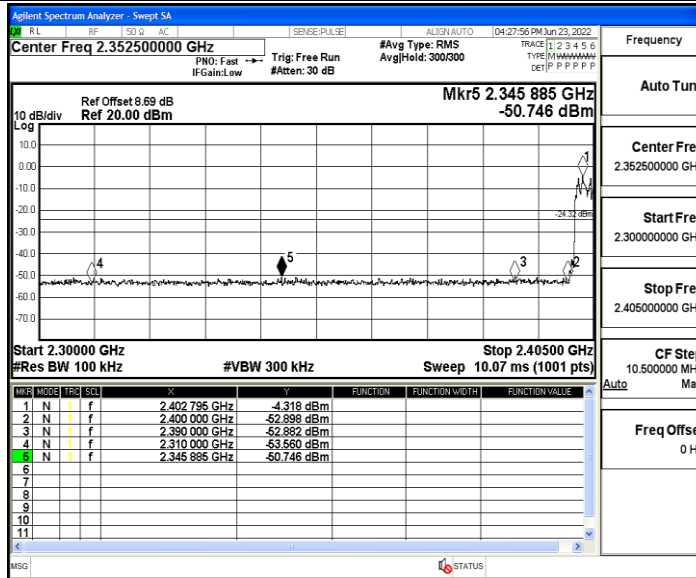
2DH5_Ant1_Low_2402



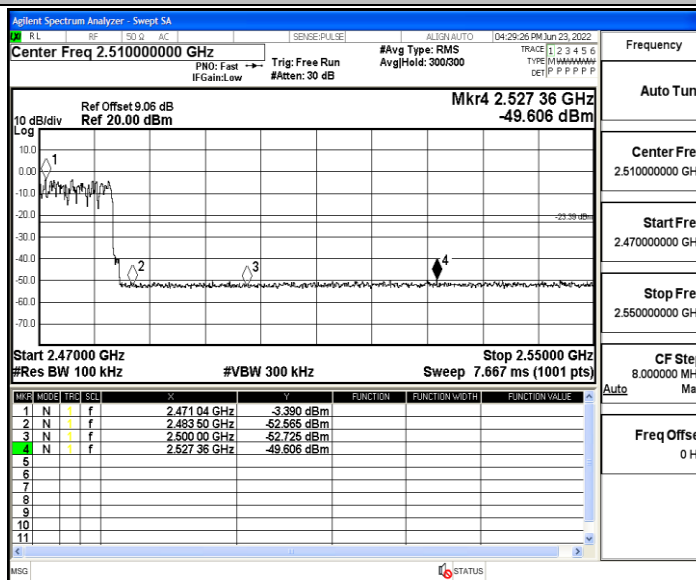
2DH5_Ant1_High_2480



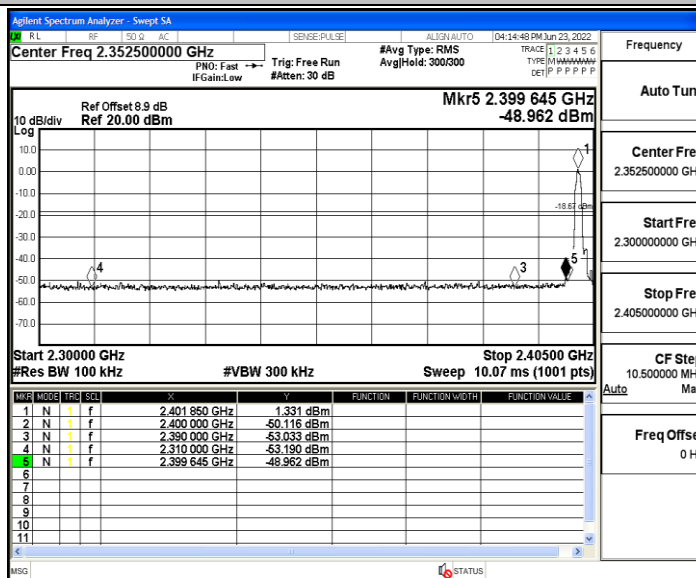
2DH5_Ant1_Low_Hop_2402



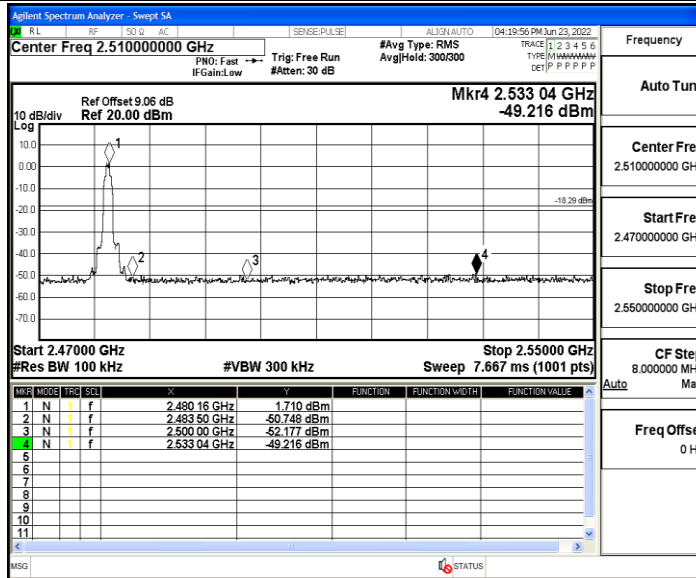
2DH5_Ant1_High_Hop_2480



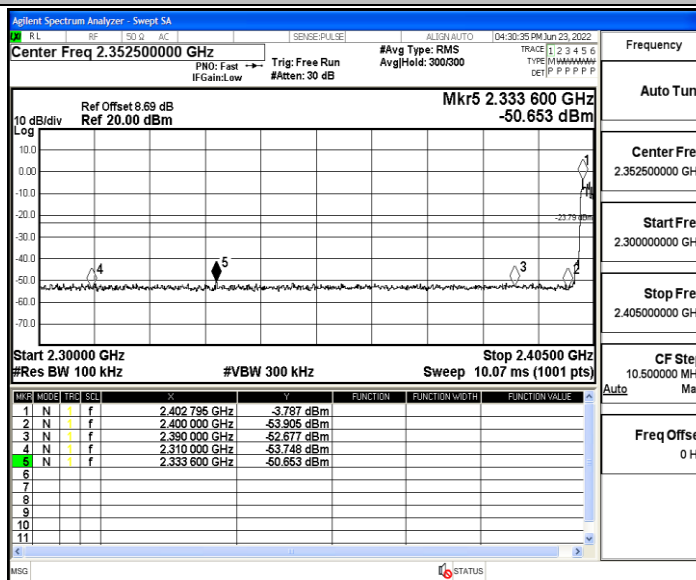
3DH5_Ant1_Low_2402



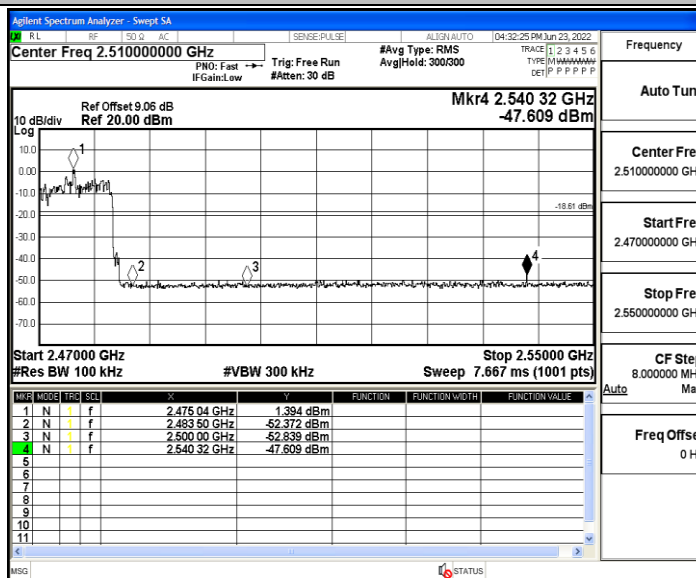
3DH5_Ant1_High_2480



3DH5_Ant1_Low_Hop_2402



3DH5_Ant1_High_Hop_2480



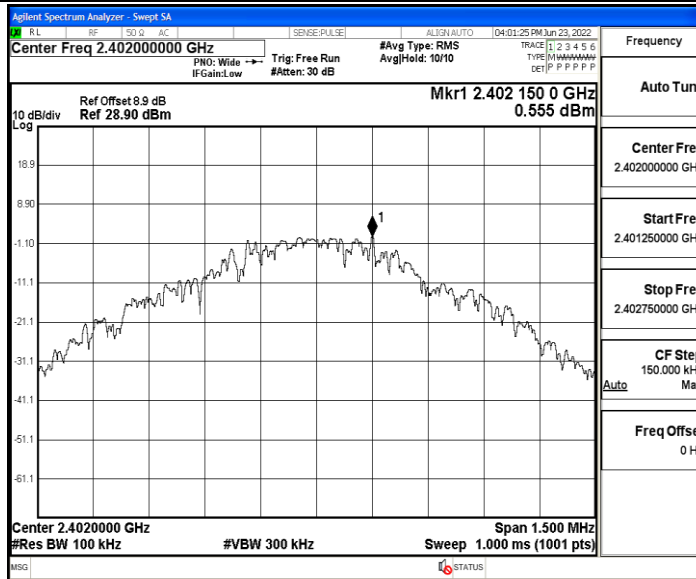
Appendix H: Conducted Spurious Emission

Test Result

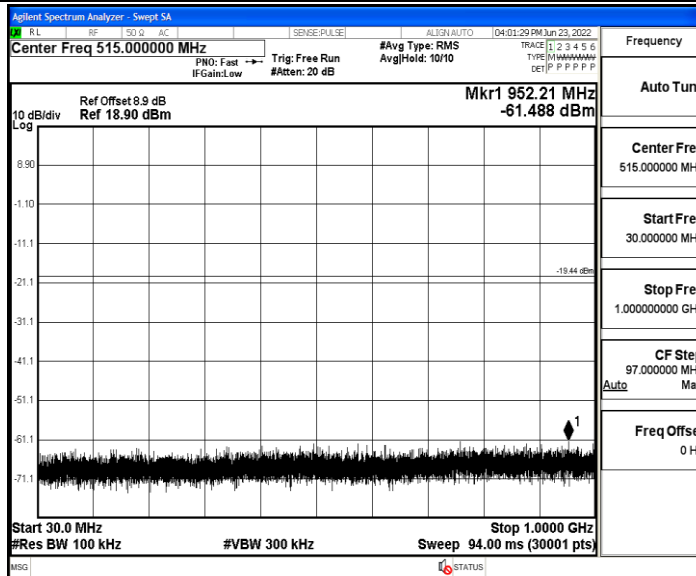
TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	Reference	0.56	0.56	---	PASS
			30~1000	0.56	-61.49	≤-19.44	PASS
			1000~26500	0.56	-34.49	≤-19.44	PASS
		2441	Reference	0.59	0.59	---	PASS
			30~1000	0.59	-61.58	≤-19.41	PASS
			1000~26500	0.59	-32.96	≤-19.41	PASS
		2480	Reference	0.87	0.87	---	PASS
			30~1000	0.87	-61.41	≤-19.13	PASS
			1000~26500	0.87	-34.95	≤-19.13	PASS
2DH5	Ant1	2402	Reference	0.39	0.39	---	PASS
			30~1000	0.39	-61.24	≤-19.61	PASS
			1000~26500	0.39	-39.71	≤-19.61	PASS
		2441	Reference	-4.41	-4.41	---	PASS
			30~1000	-4.41	-61.43	≤-24.41	PASS
			1000~26500	-4.41	-40.66	≤-24.41	PASS
		2480	Reference	-1.01	-1.01	---	PASS
			30~1000	-1.01	-60.53	≤-21.01	PASS
			1000~26500	-1.01	-39.89	≤-21.01	PASS
3DH5	Ant1	2402	Reference	-3.77	-3.77	---	PASS
			30~1000	-3.77	-61.44	≤-23.77	PASS
			1000~26500	-3.77	-38.6	≤-23.77	PASS
		2441	Reference	-3.57	-3.57	---	PASS
			30~1000	-3.57	-62.2	≤-23.57	PASS
			1000~26500	-3.57	-37.89	≤-23.57	PASS
		2480	Reference	-3.42	-3.42	---	PASS
			30~1000	-3.42	-61.5	≤-23.42	PASS
			1000~26500	-3.42	-38.89	≤-23.42	PASS

Test Graphs

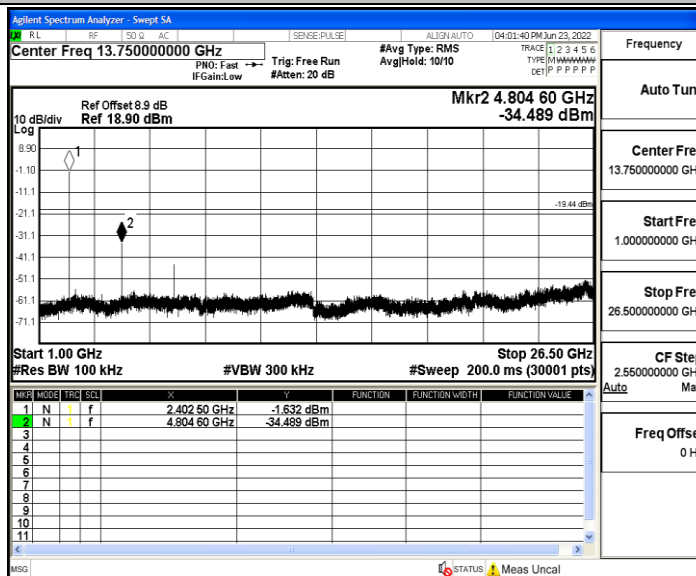
DH5_Ant1_2402_0~Reference



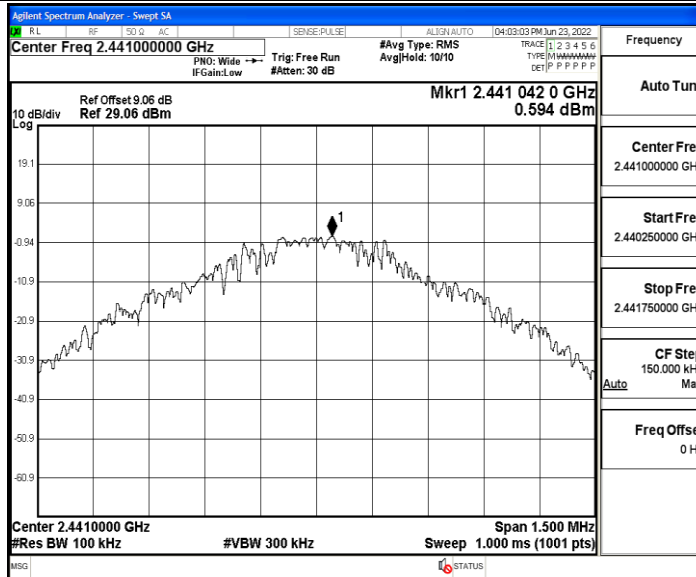
DH5_Ant1_2402_30~1000



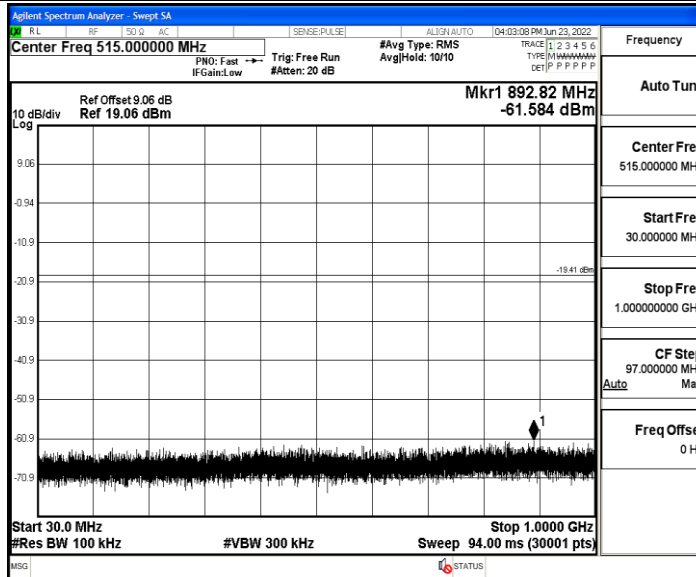
DH5_Ant1_2402_1000~26500



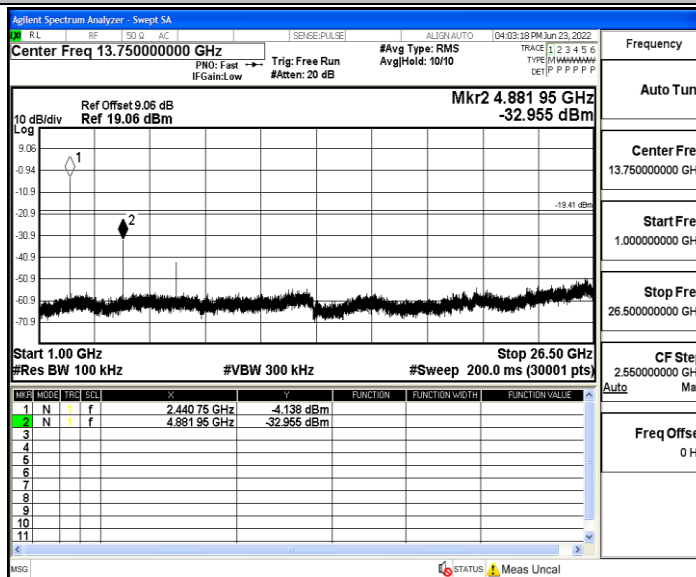
DH5_Ant1_2441_0~Reference



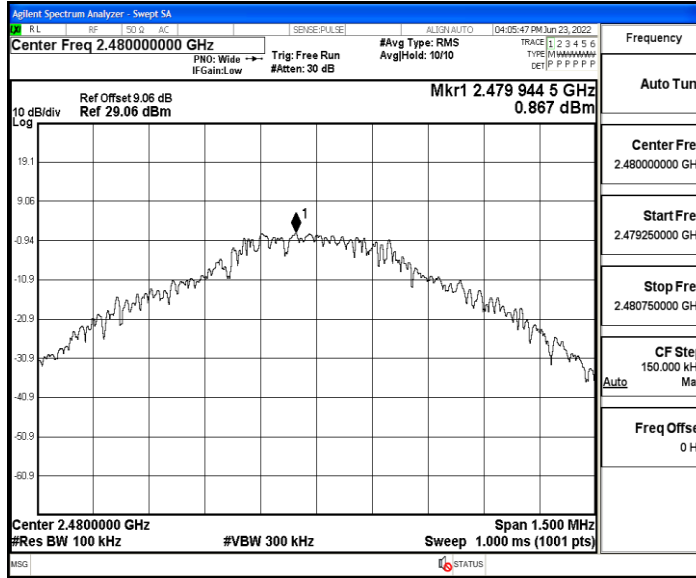
DH5_Ant1_2441_30~1000



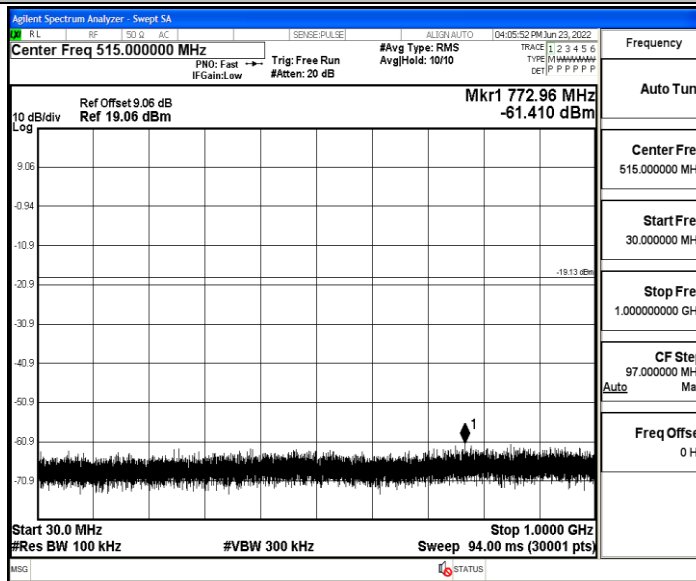
DH5_Ant1_2441_1000~26500



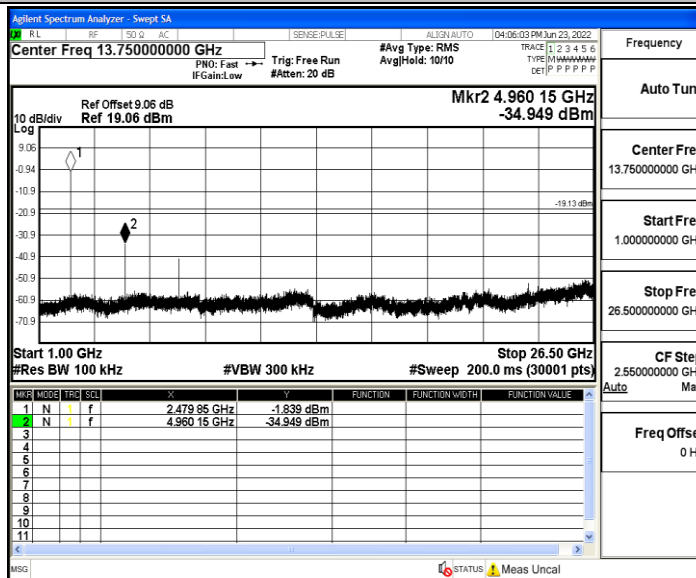
DH5_Ant1_2480_0~Reference



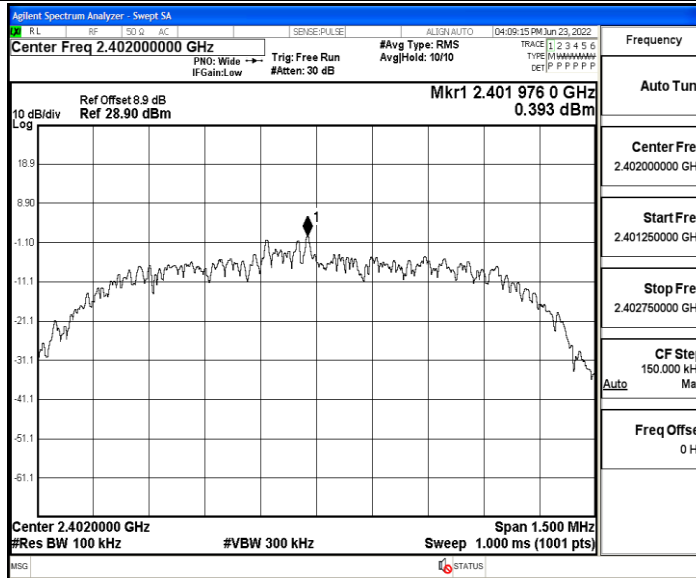
DH5_Ant1_2480_30~1000



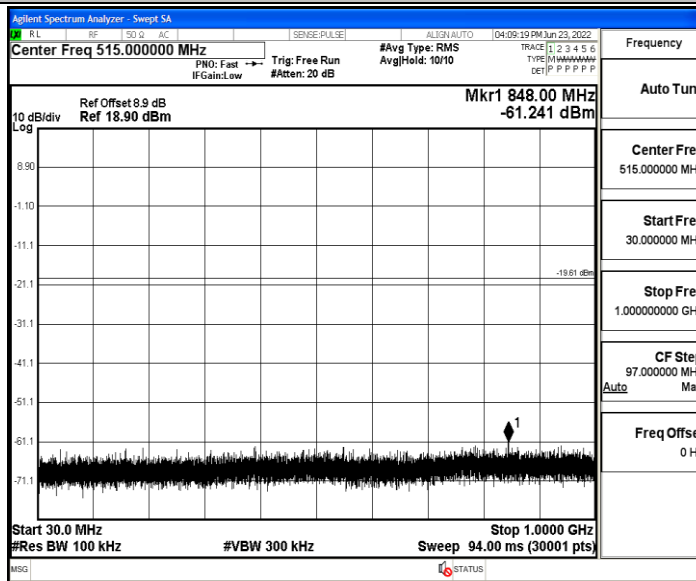
DH5_Ant1_2480_1000~26500



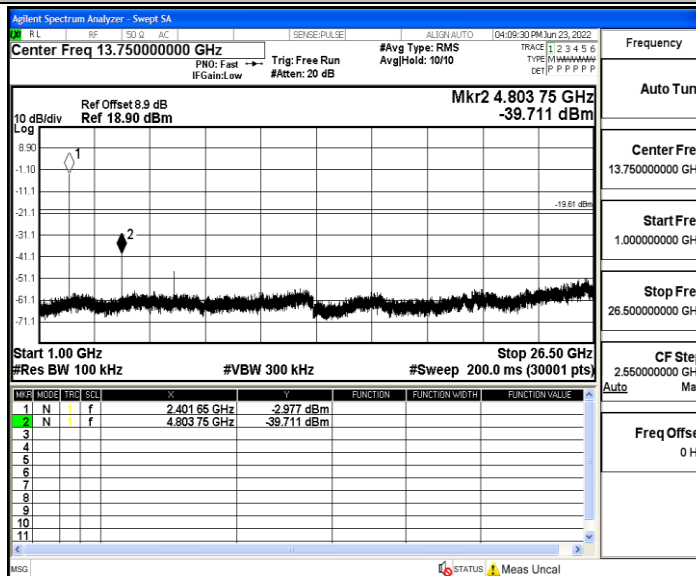
2DH5_Ant1_2402_0~Reference



2DH5_Ant1_2402_30~1000



2DH5_Ant1_2402_1000~26500



2DH5_Ant1_2441_0~Reference