

Appendix Test Data for BT(BDR/EDR) (Conducted Measurement)**Product Name: True Wireless Earbuds****Trade Mark: Tranya****Test Model: X1****FCC ID: 2A4AX-X1****Environmental Conditions**

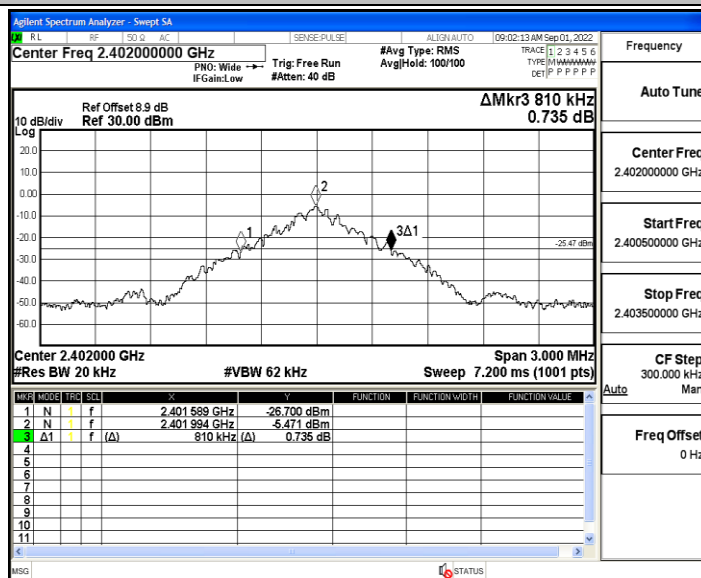
Temperature:	25.5°C
Relative Humidity:	55%
ATM Pressure:	100.0 kPa
Test Engineer:	Anna Hu
Supervised by:	Hugo Chen
NOTE	N/A

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

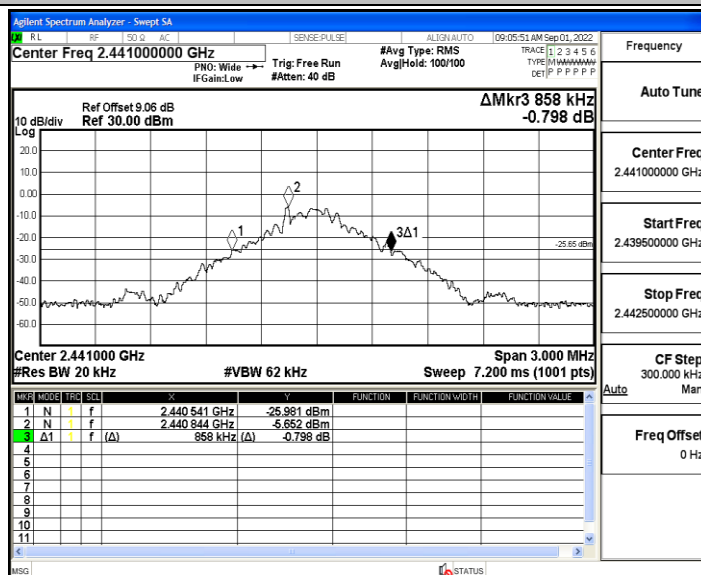
TestMode	Antenna	Channel	20db EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.810	2401.589	2402.399	---	---
		2441	0.858	2440.541	2441.399	---	---
		2480	0.888	2479.538	2480.426	---	---
2DH5	Ant1	2402	1.290	2401.343	2402.633	---	---
		2441	1.329	2440.331	2441.660	---	---
		2480	1.206	2479.394	2480.600	---	---
3DH5	Ant1	2402	1.335	2401.328	2402.663	---	---
		2441	1.335	2440.322	2441.657	---	---
		2480	1.173	2479.424	2480.597	---	---

Test Graphs

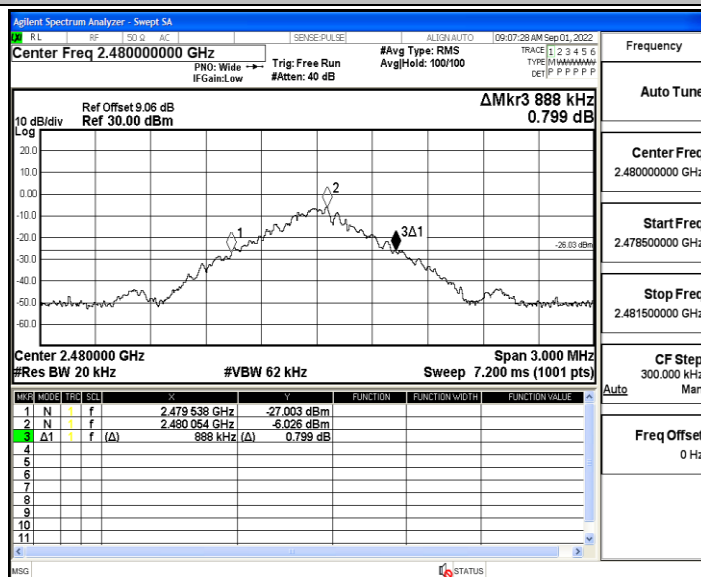
DH5_Ant1_2402



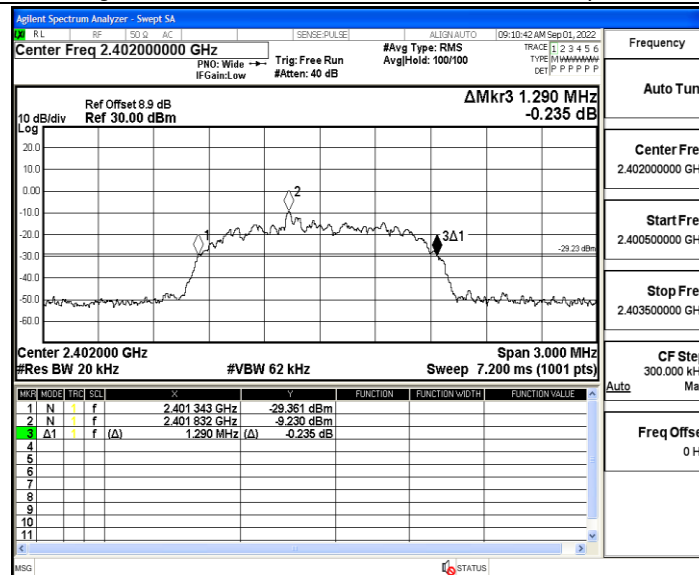
DH5_Ant1_2441



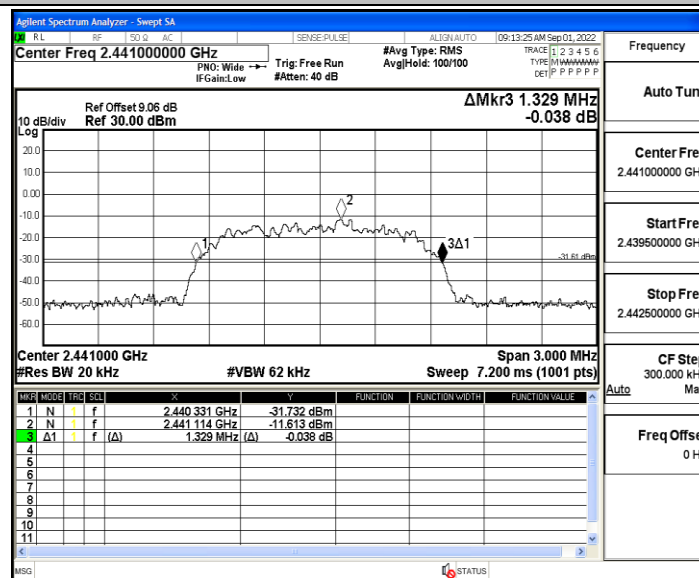
DH5_Ant1_2480



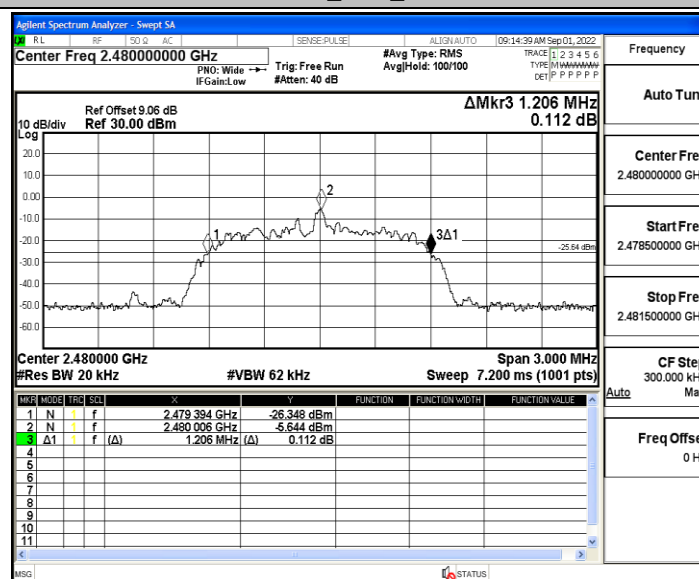
2DH5_Ant1_2402



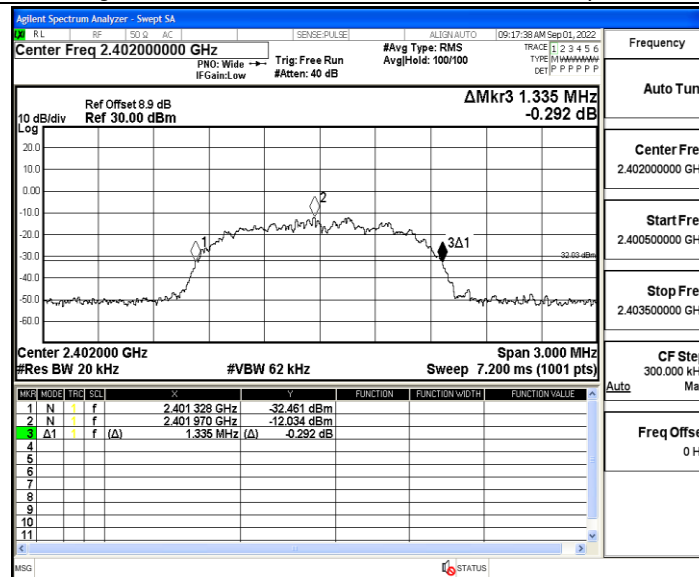
2DH5_Ant1_2441



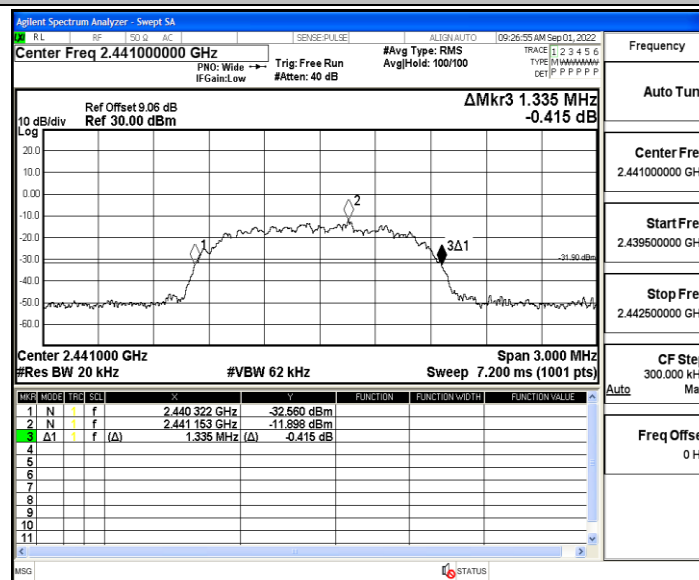
2DH5_Ant1_2480



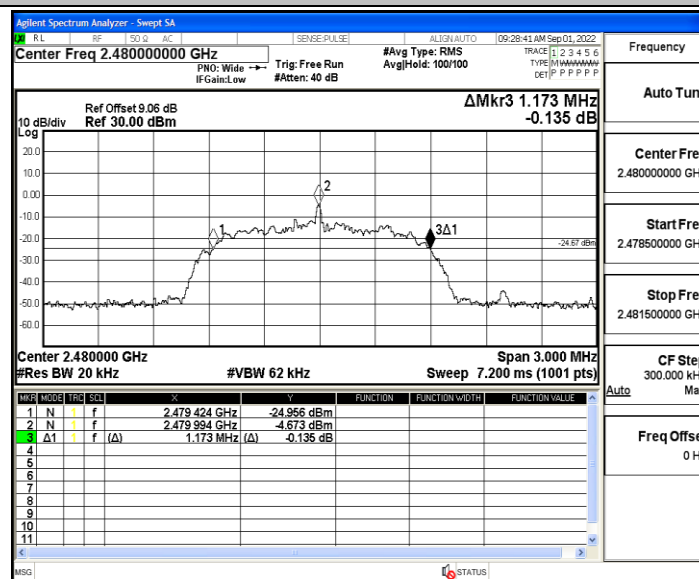
3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480



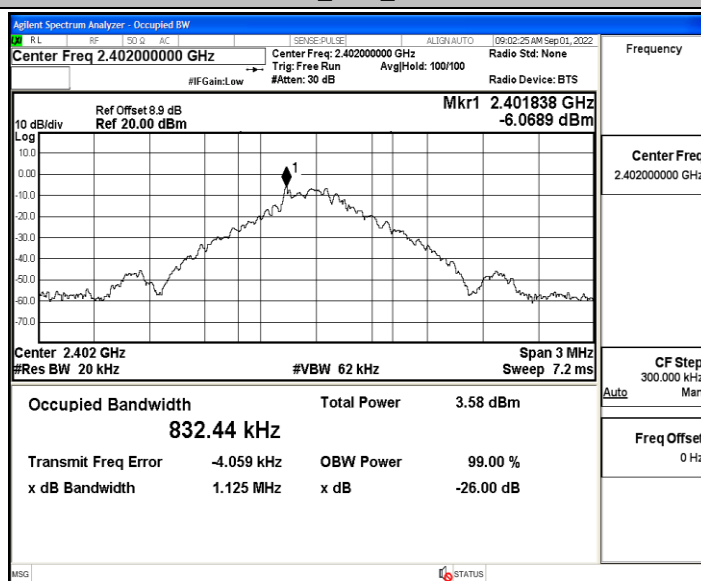
Appendix B: Occupied Channel Bandwidth

Test Result

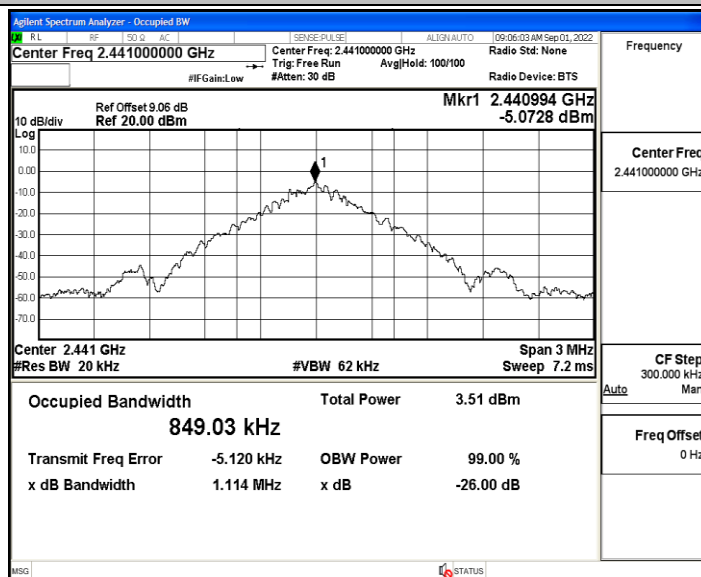
TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.83244	2401.580	2402.412	---	---
		2441	0.84903	2440.570	2441.419	---	---
		2480	0.84477	2479.573	2480.417	---	---
2DH5	Ant1	2402	1.1548	2401.415	2402.570	---	---
		2441	1.1575	2440.414	2441.572	---	---
		2480	1.1568	2479.415	2480.571	---	---
3DH5	Ant1	2402	1.1654	2401.410	2402.576	---	---
		2441	1.1610	2440.413	2441.574	---	---
		2480	1.1719	2479.406	2480.578	---	---

Test Graphs

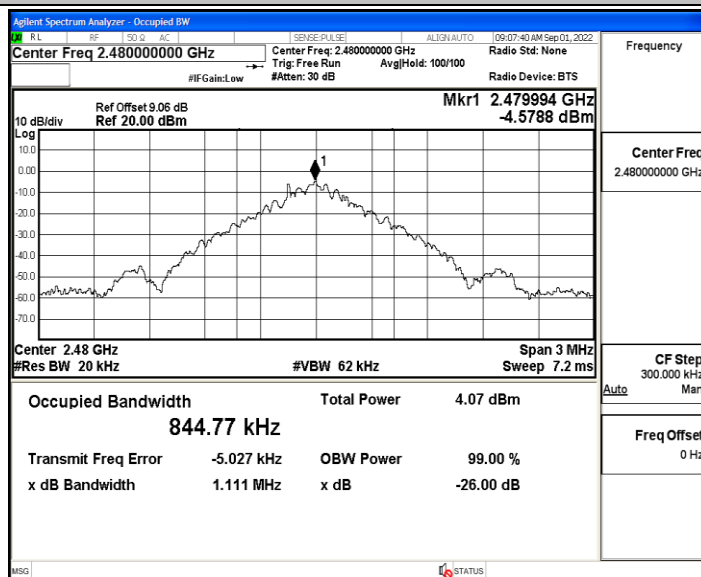
DH5_Ant1_2402



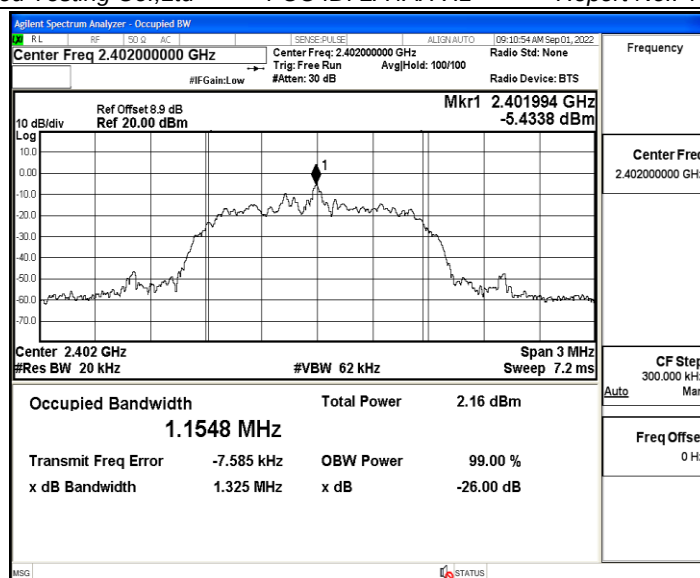
DH5_Ant1_2441



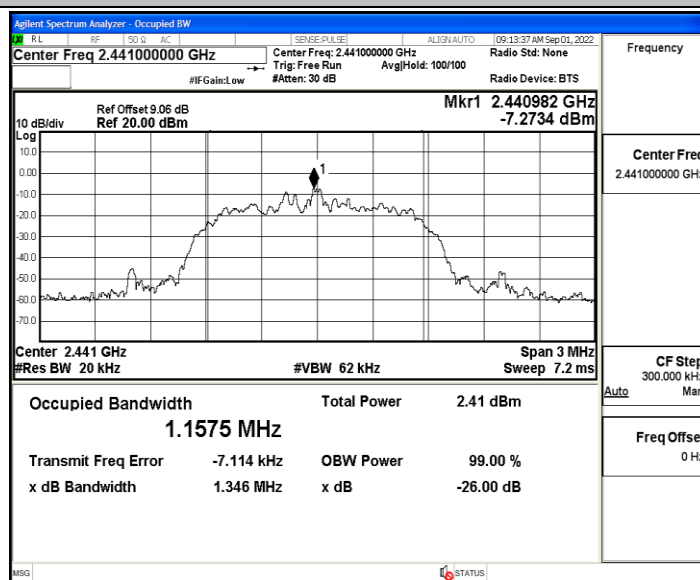
DH5_Ant1_2480



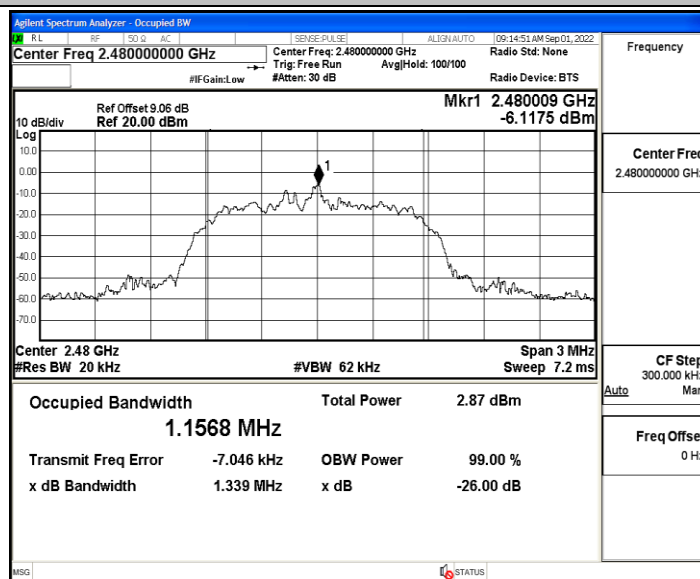
2DH5_Ant1_2402



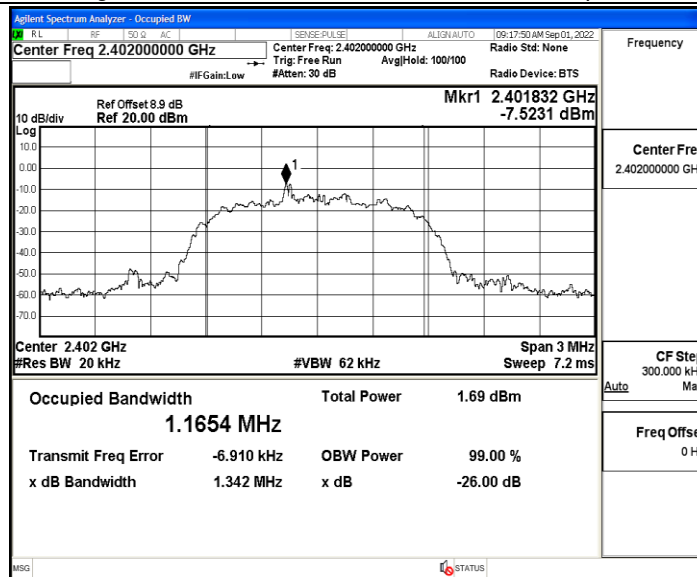
2DH5_Ant1_2441



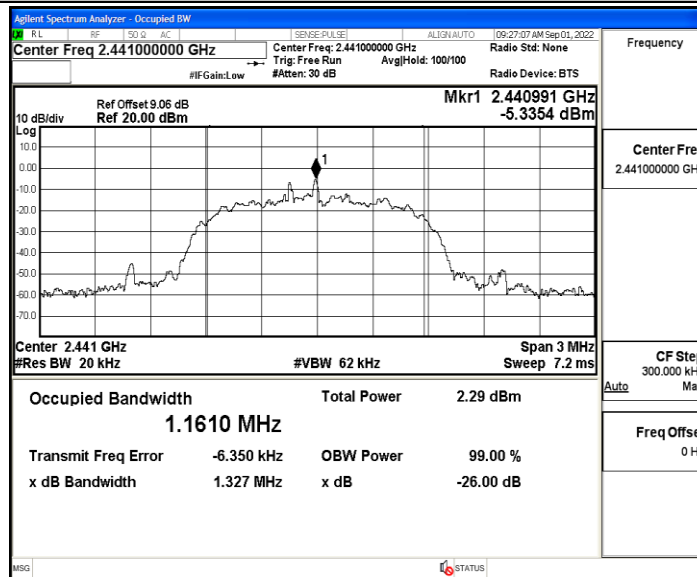
2DH5_Ant1_2480



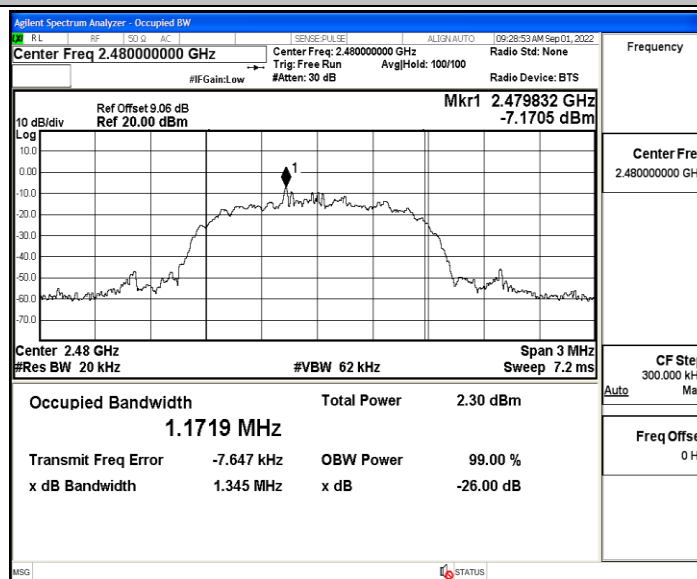
3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480



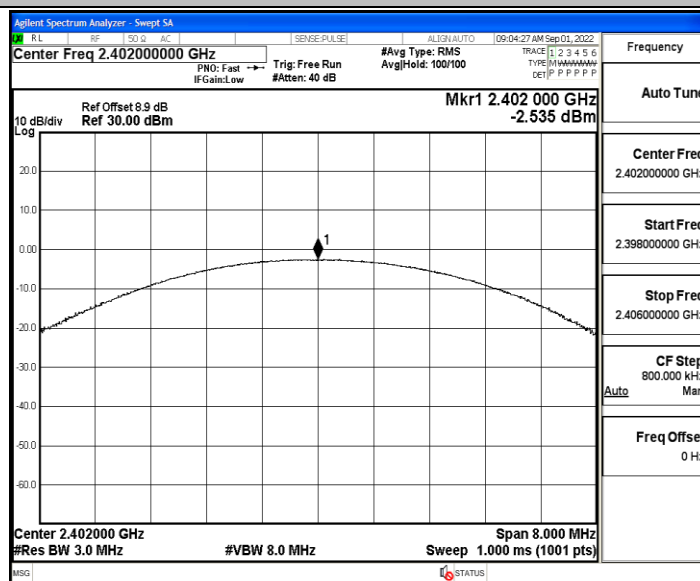
Appendix C: Maximum Peak conducted output power

Test Result

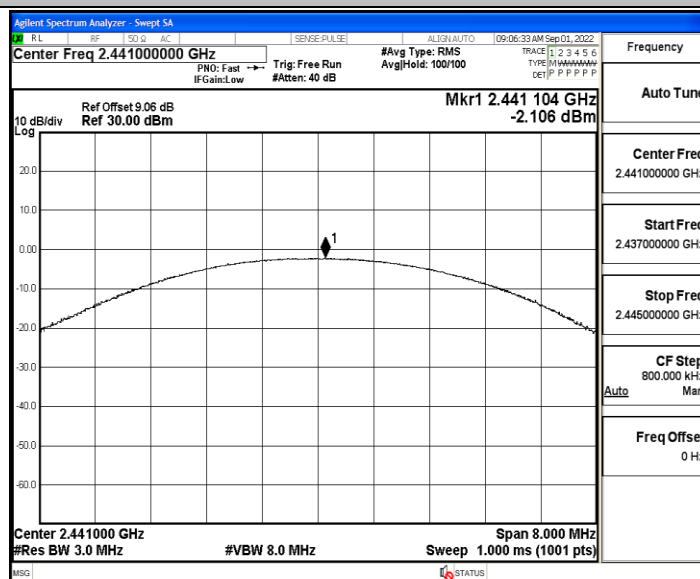
TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
DH5	Ant1	2402	-2.54	≤30	PASS
		2441	-2.11	≤30	PASS
		2480	-1.83	≤30	PASS
2DH5	Ant1	2402	-2.55	≤20.97	PASS
		2441	-2.3	≤20.97	PASS
		2480	-1.87	≤20.97	PASS
3DH5	Ant1	2402	-2.62	≤20.97	PASS
		2441	-2.31	≤20.97	PASS
		2480	-1.88	≤20.97	PASS

Test Graphs

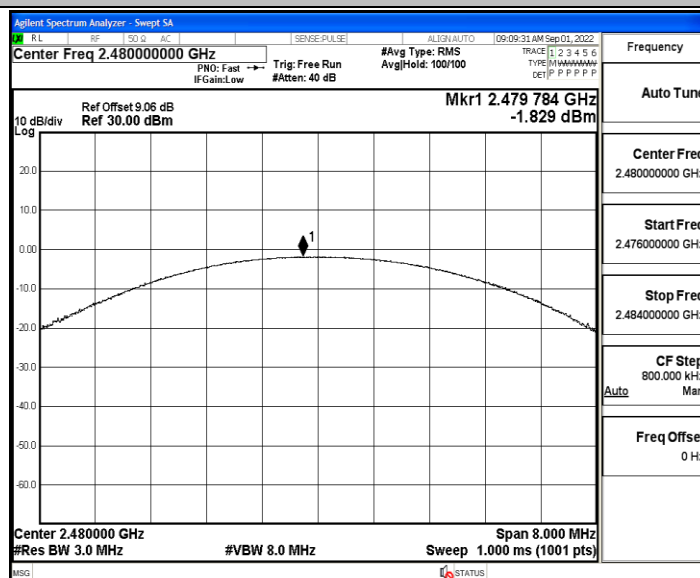
DH5_Ant1_2402



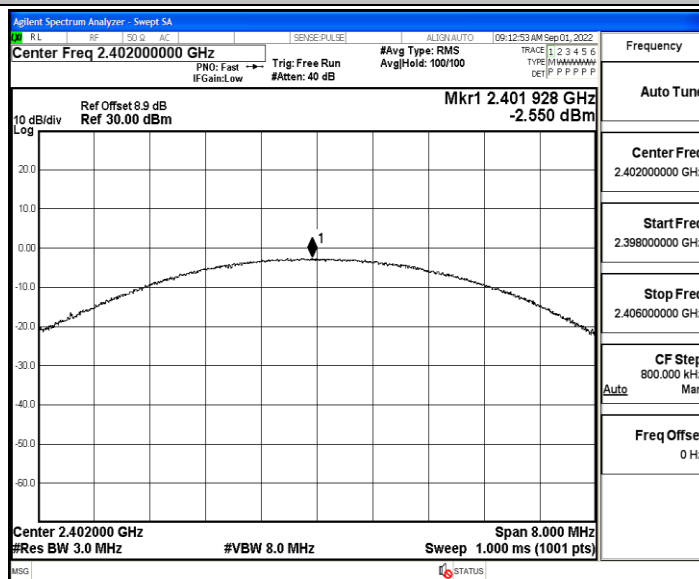
DH5_Ant1_2441



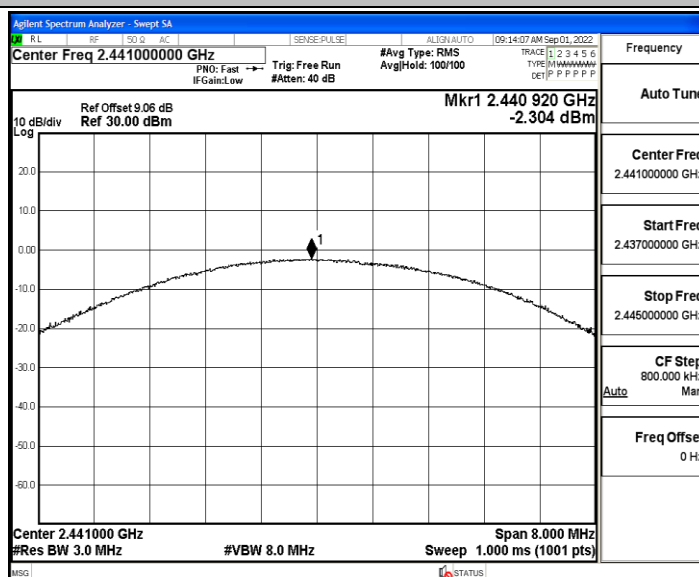
DH5_Ant1_2480



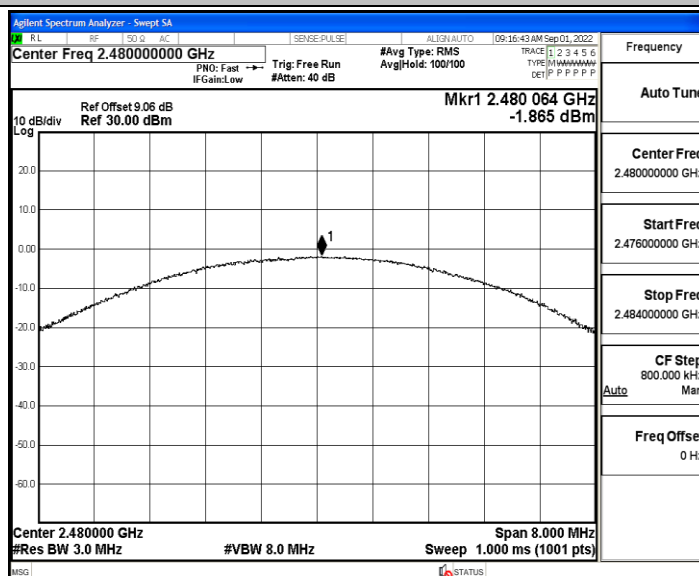
2DH5_Ant1_2402



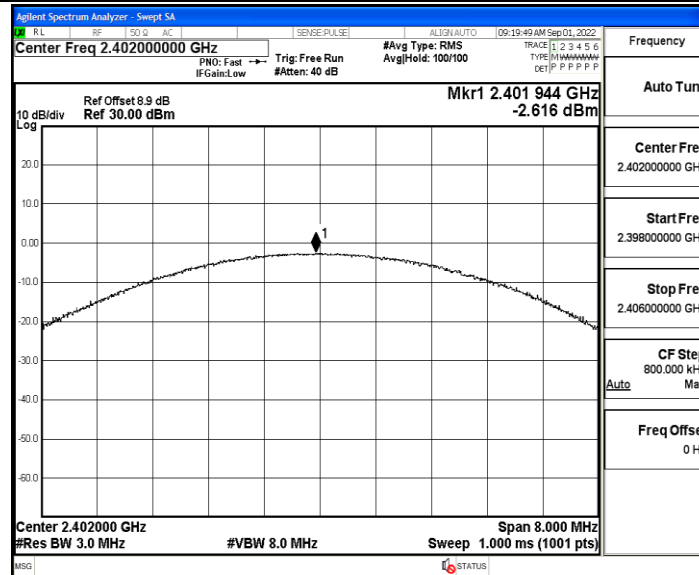
2DH5_Ant1_2441



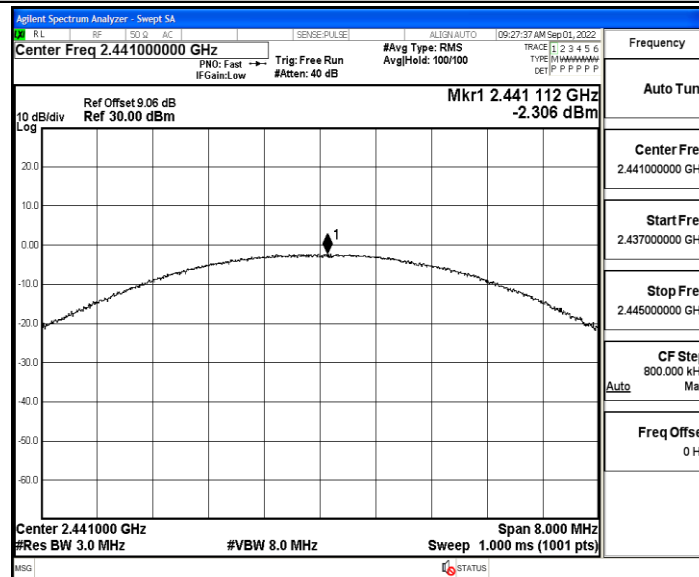
2DH5_Ant1_2480



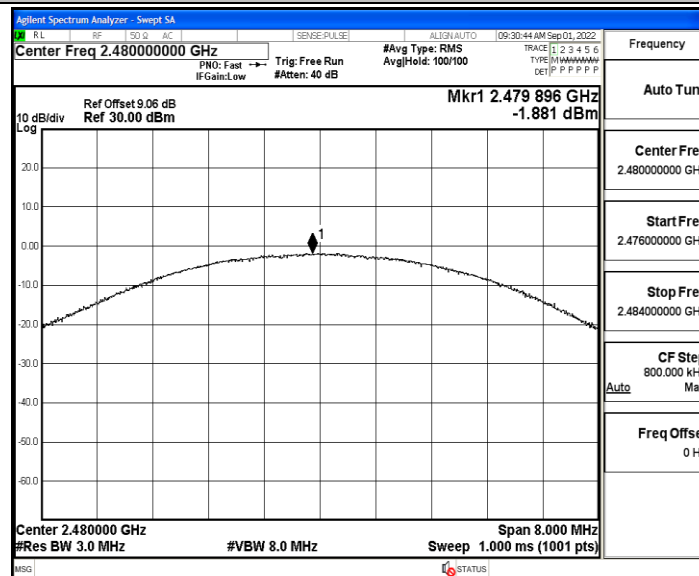
3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480



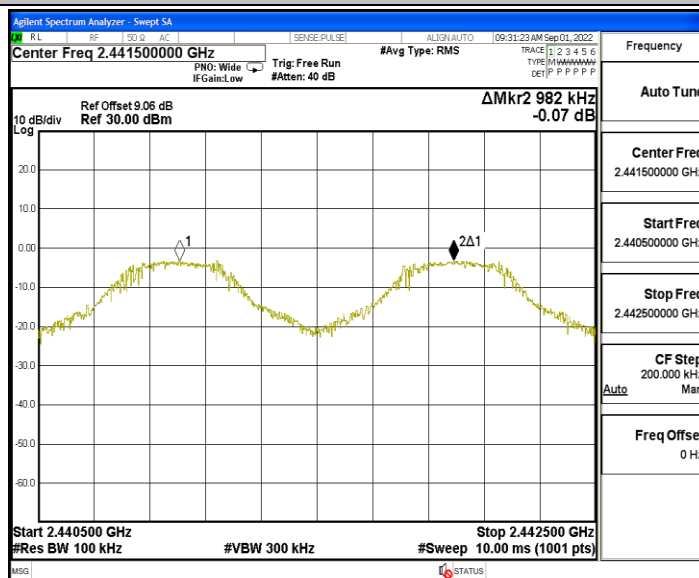
Appendix D: Carrier frequency separation

Test Result

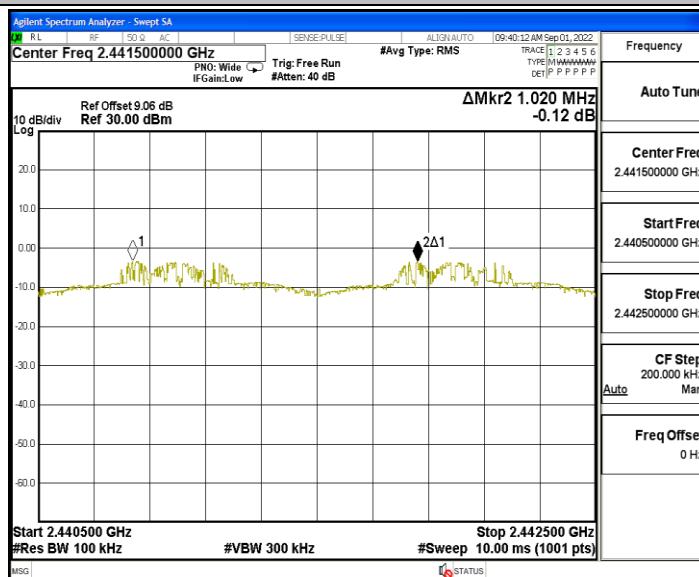
TestMode	Antenna	Channel	Result[MHz]	Limit[MHz]	Verdict
DH5	Ant1	Hop	0.982	≥ 0.888	PASS
2DH5	Ant1	Hop	1.02	≥ 0.886	PASS
3DH5	Ant1	Hop	1	≥ 0.890	PASS

Test Graphs

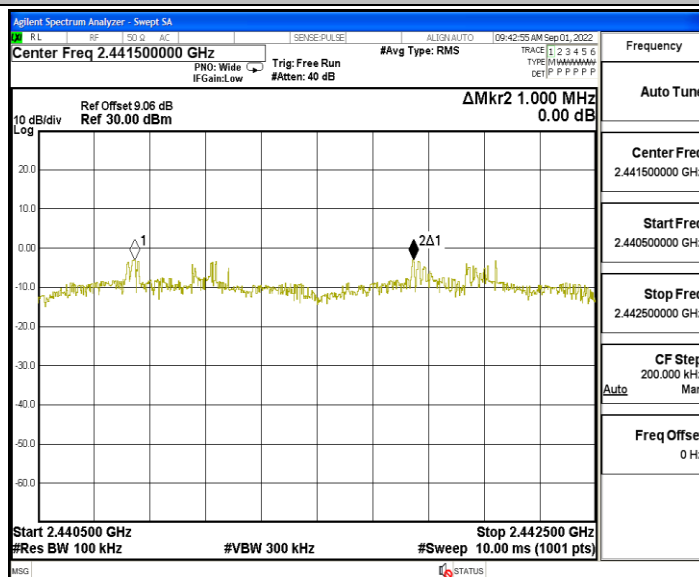
DH5_Ant1_Hop



2DH5_Ant1_Hop



3DH5_Ant1_Hop

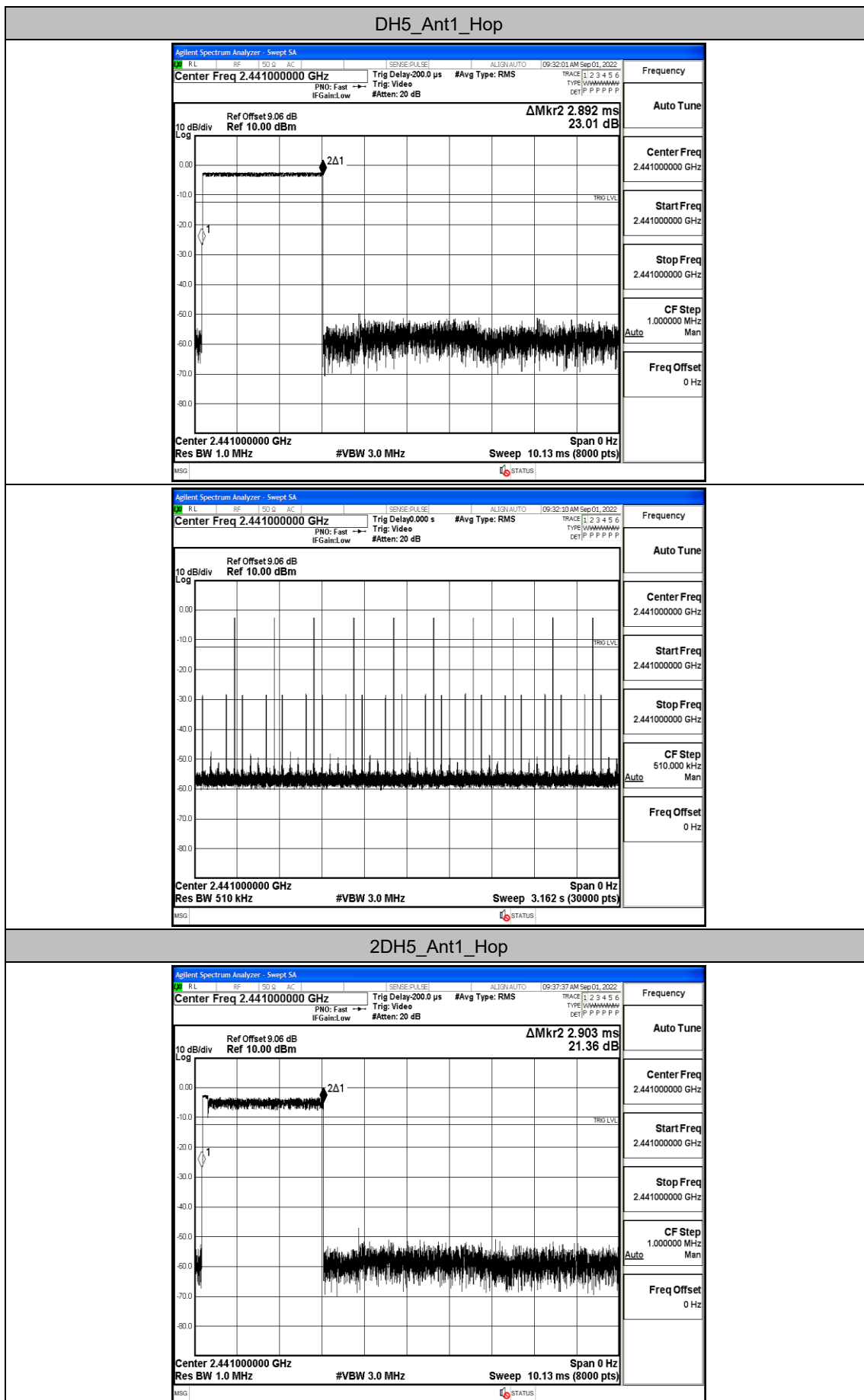


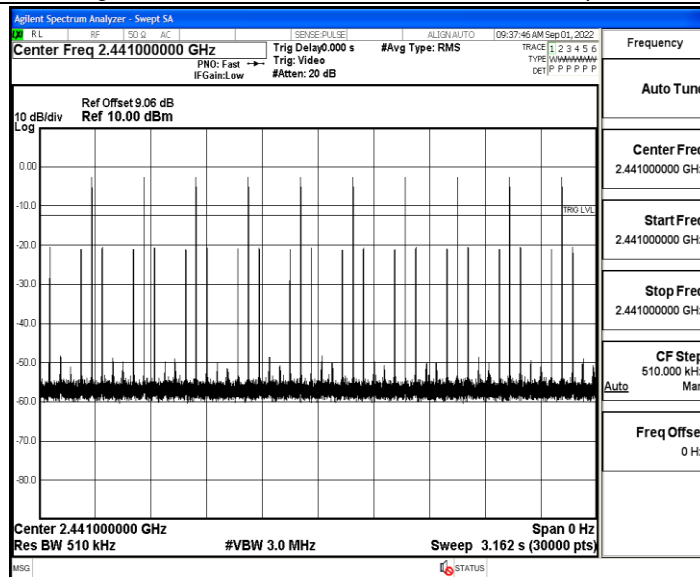
Appendix E: Time of occupancy

Test Result

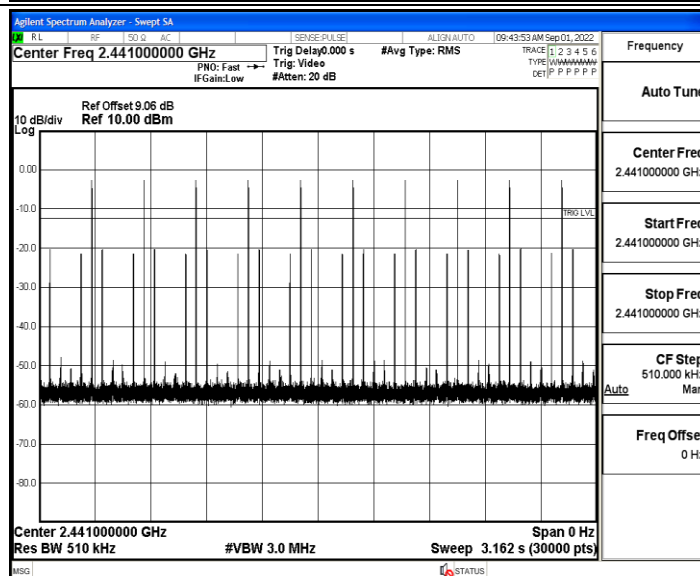
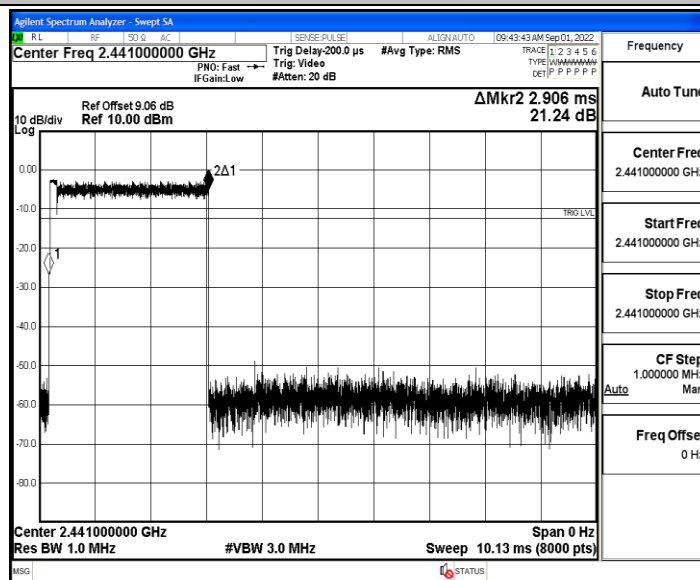
TestMode	Antenna	Channel	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH5	Ant1	Hop	2.89	110	0.318	≤0.4	PASS
2DH5	Ant1	Hop	2.90	110	0.319	≤0.4	PASS
3DH5	Ant1	Hop	2.91	110	0.32	≤0.4	PASS

Test Graphs





3DH5_Ant1_Hop



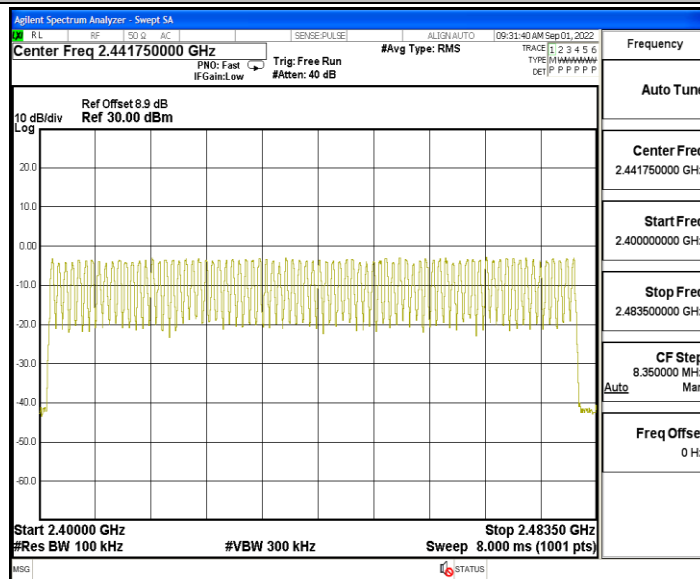
Appendix F: Number of hopping channels

Test Result

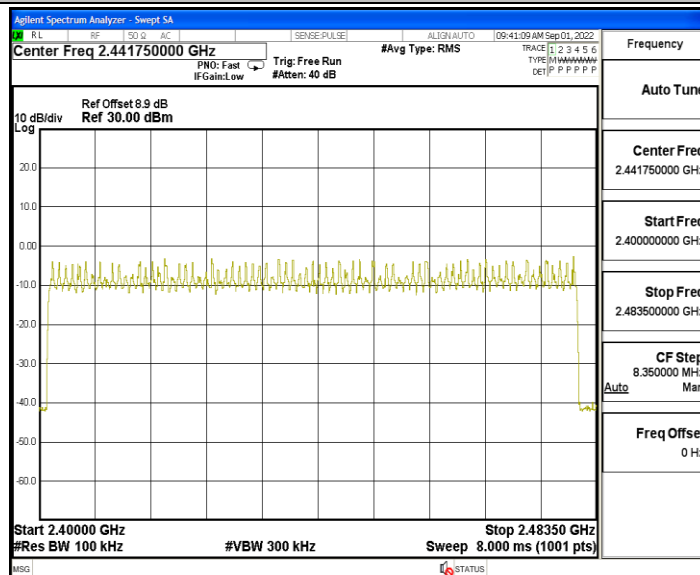
TestMode	Antenna	Channel	Result[Num]	Limit[Num]	Verdict
DH5	Ant1	Hop	79	≥15	PASS
2DH5	Ant1	Hop	79	≥15	PASS
3DH5	Ant1	Hop	79	≥15	PASS

Test Graphs

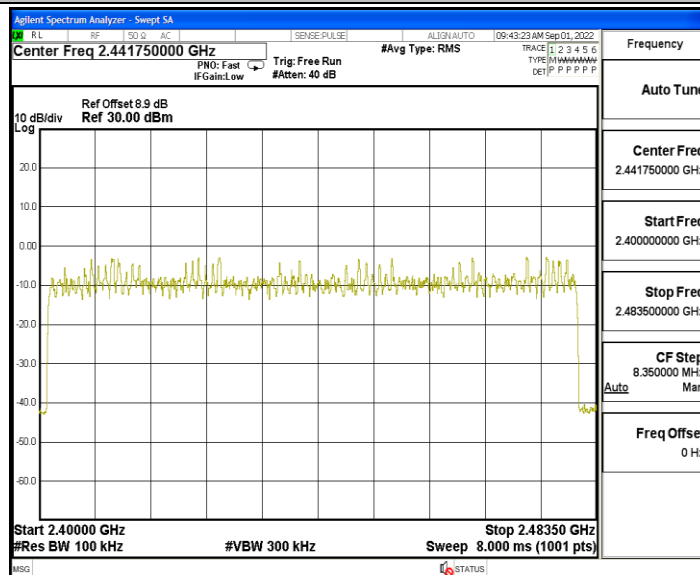
DH5_Ant1_Hop



2DH5_Ant1_Hop



3DH5_Ant1_Hop



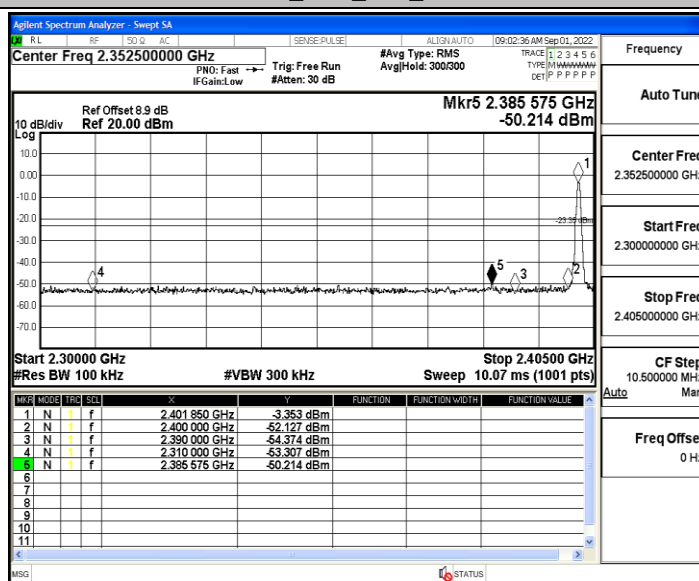
Appendix G: Band edge measurements

Test Result

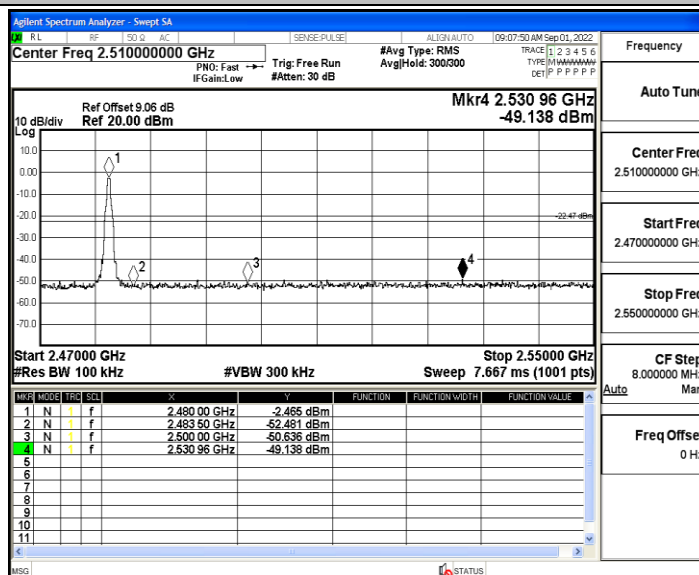
TestMode	Antenna	ChName	Channel	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	-3.35	-50.21	≤ -23.35	PASS
		High	2480	-2.47	-49.14	≤ -22.47	PASS
		Low	Hop_2402	-4.03	-50.2	≤ -24.03	PASS
		High	Hop_2480	-2.68	-49.47	≤ -22.68	PASS
2DH5	Ant1	Low	2402	-3.61	-50.12	≤ -23.61	PASS
		High	2480	-2.47	-49.18	≤ -22.47	PASS
		Low	Hop_2402	-8.92	-50.75	≤ -28.92	PASS
		High	Hop_2480	-3.29	-49.25	≤ -23.29	PASS
3DH5	Ant1	Low	2402	-3.78	-50.24	≤ -23.78	PASS
		High	2480	-2.61	-49.75	≤ -22.61	PASS
		Low	Hop_2402	-5.53	-50.25	≤ -25.53	PASS
		High	Hop_2480	-3.09	-49.4	≤ -23.09	PASS

Test Graphs

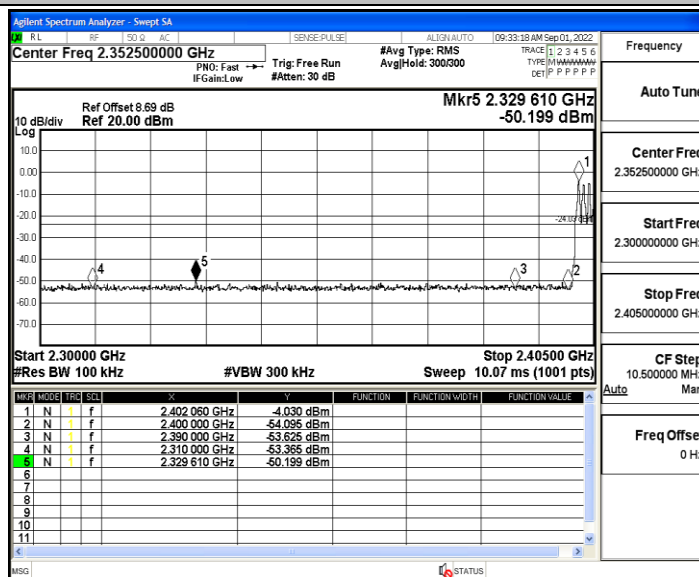
DH5_Ant1_Low_2402



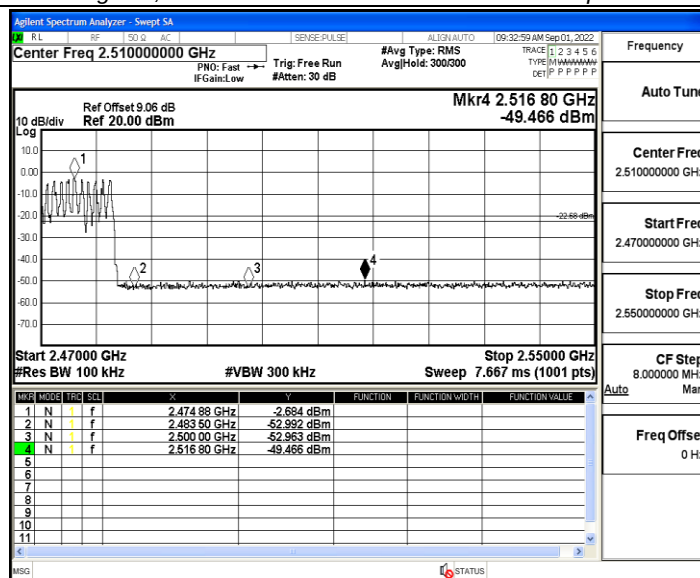
DH5_Ant1_High_2480



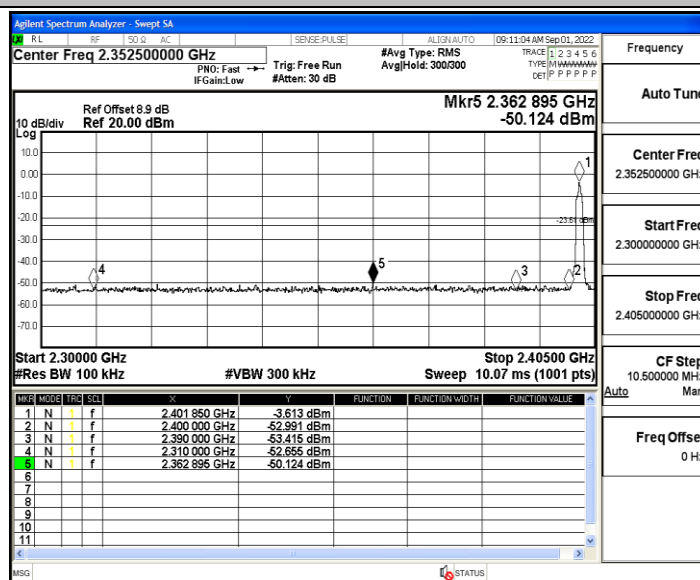
DH5_Ant1_Low_Hop_2402



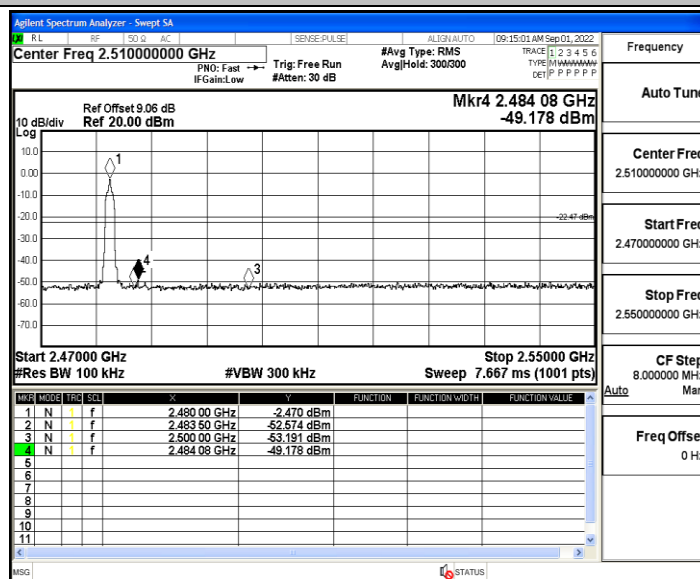
DH5_Ant1_High_Hop_2480



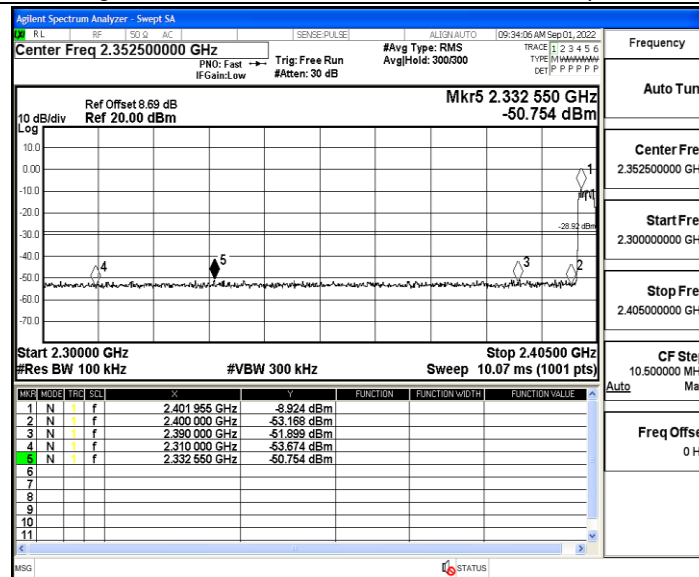
2DH5_Ant1_Low_2402



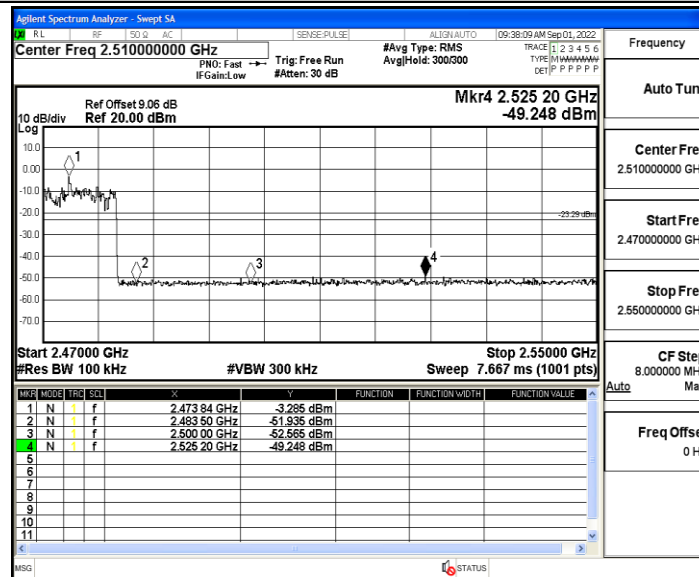
2DH5_Ant1_High_2480



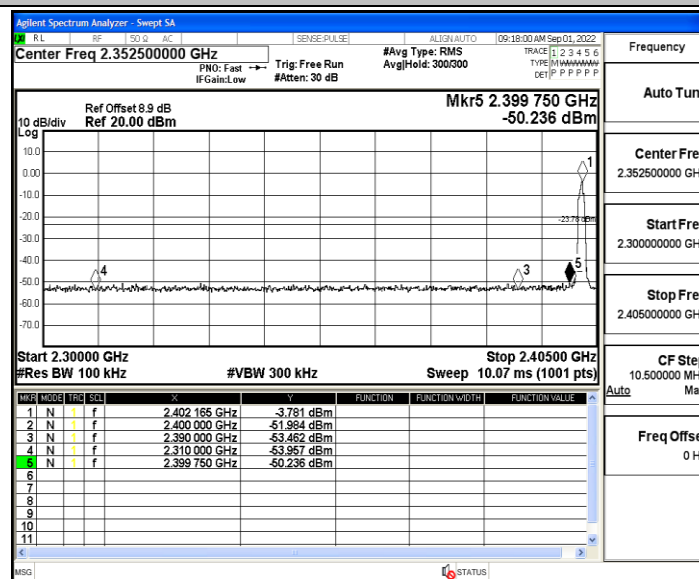
2DH5_Ant1_Low_Hop_2402



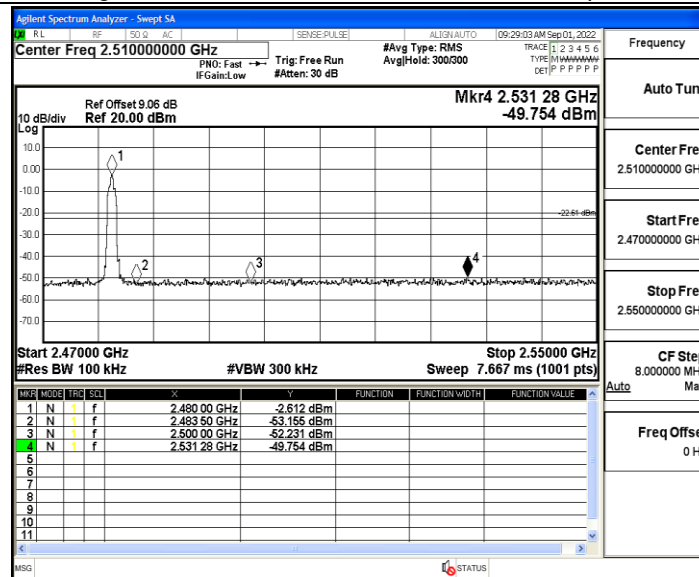
2DH5_Ant1_High_Hop_2480



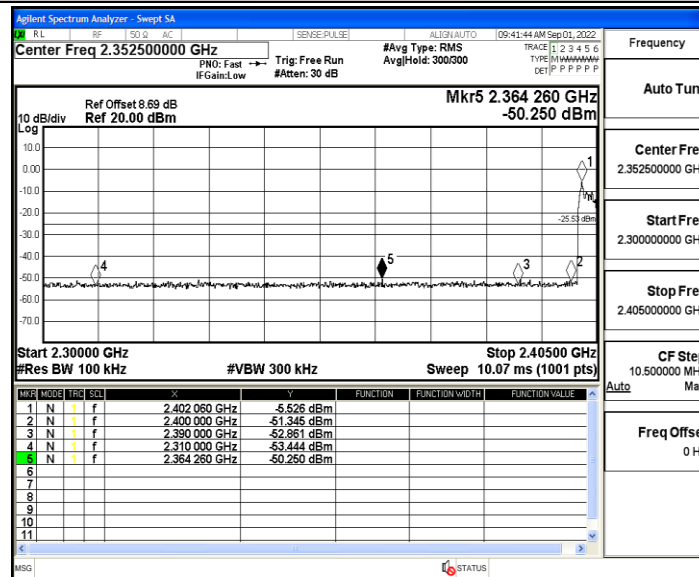
3DH5_Ant1_Low_2402



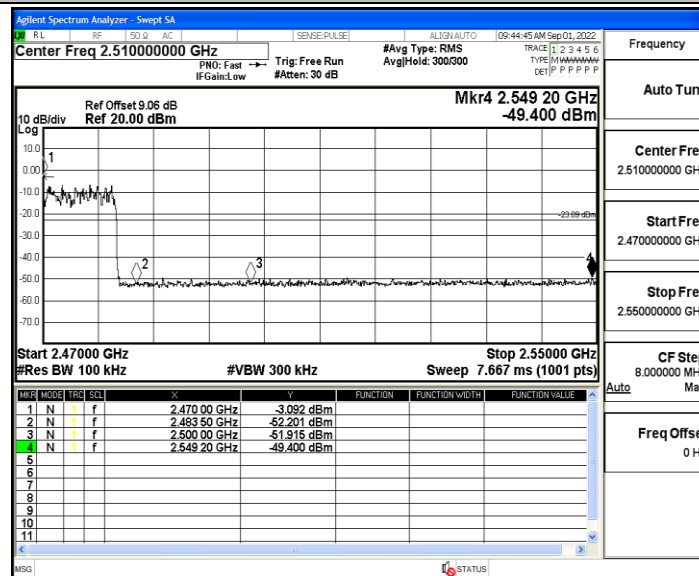
3DH5_Ant1_High_2480



3DH5_Ant1_Low_Hop_2402



3DH5_Ant1_High_Hop_2480



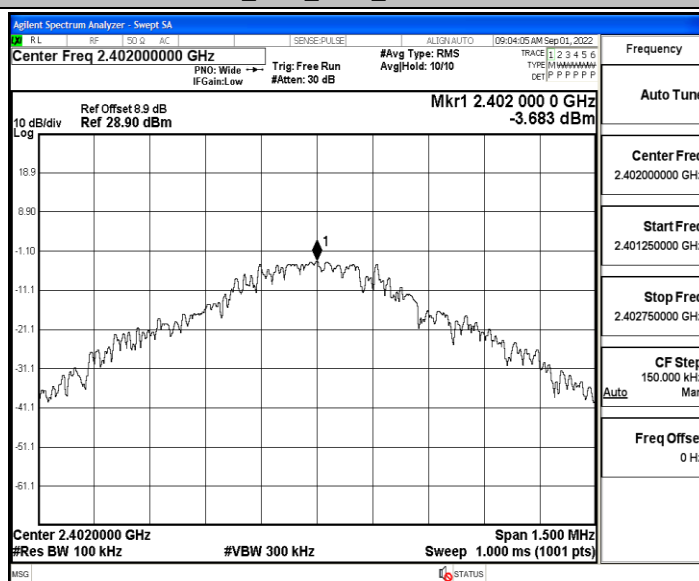
Appendix H: Conducted Spurious Emission

Test Result

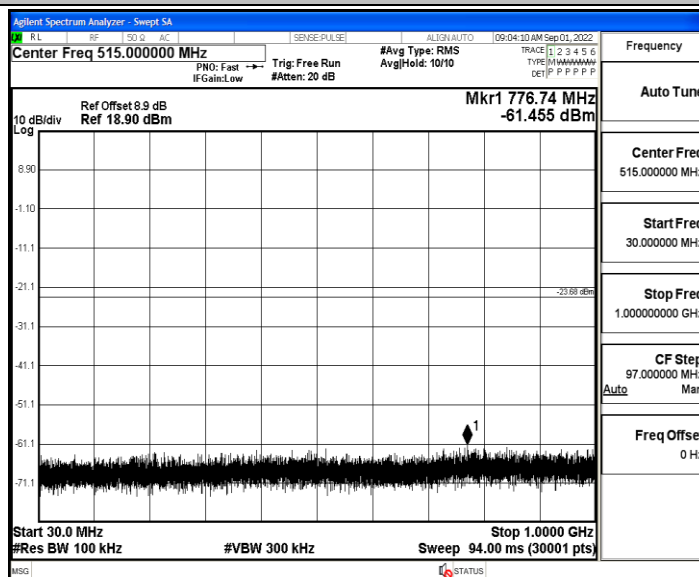
TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	Reference	-3.68	-3.68	---	PASS
			30~1000	-3.68	-61.46	≤-23.68	PASS
			1000~26500	-3.68	-36.72	≤-23.68	PASS
		2441	Reference	-3.44	-3.44	---	PASS
			30~1000	-3.44	-61.05	≤-23.44	PASS
			1000~26500	-3.44	-36.48	≤-23.44	PASS
		2480	Reference	-3.07	-3.07	---	PASS
			30~1000	-3.07	-60.89	≤-23.07	PASS
			1000~26500	-3.07	-37.89	≤-23.07	PASS
2DH5	Ant1	2402	Reference	-8.11	-8.11	---	PASS
			30~1000	-8.11	-61.74	≤-28.11	PASS
			1000~26500	-8.11	-38.37	≤-28.11	PASS
		2441	Reference	-8.31	-8.31	---	PASS
			30~1000	-8.31	-61.04	≤-28.31	PASS
			1000~26500	-8.31	-41.28	≤-28.31	PASS
		2480	Reference	-2.84	-2.84	---	PASS
			30~1000	-2.84	-61.2	≤-22.84	PASS
			1000~26500	-2.84	-42.08	≤-22.84	PASS
3DH5	Ant1	2402	Reference	-7.74	-7.74	---	PASS
			30~1000	-7.74	-60.19	≤-27.74	PASS
			1000~26500	-7.74	-37.63	≤-27.74	PASS
		2441	Reference	-5.66	-5.66	---	PASS
			30~1000	-5.66	-61.3	≤-25.66	PASS
			1000~26500	-5.66	-42.81	≤-25.66	PASS
		2480	Reference	-6.47	-6.47	---	PASS
			30~1000	-6.47	-61.15	≤-26.47	PASS
			1000~26500	-6.47	-41.48	≤-26.47	PASS

Test Graphs

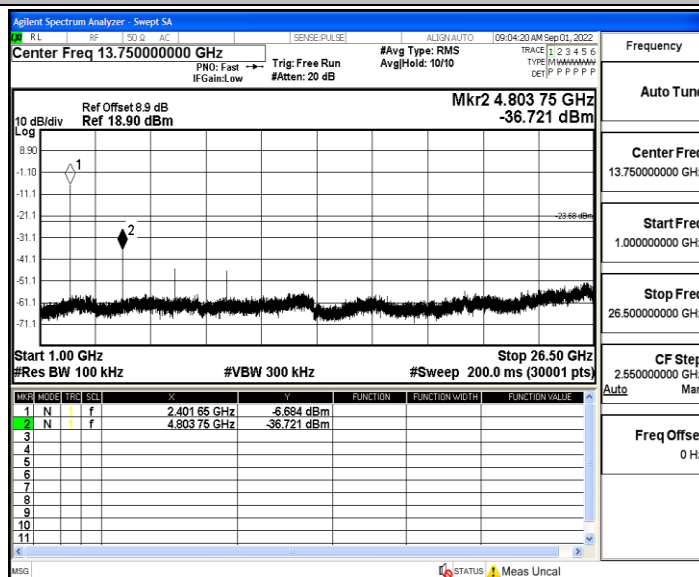
DH5_Ant1_2402_0~Reference



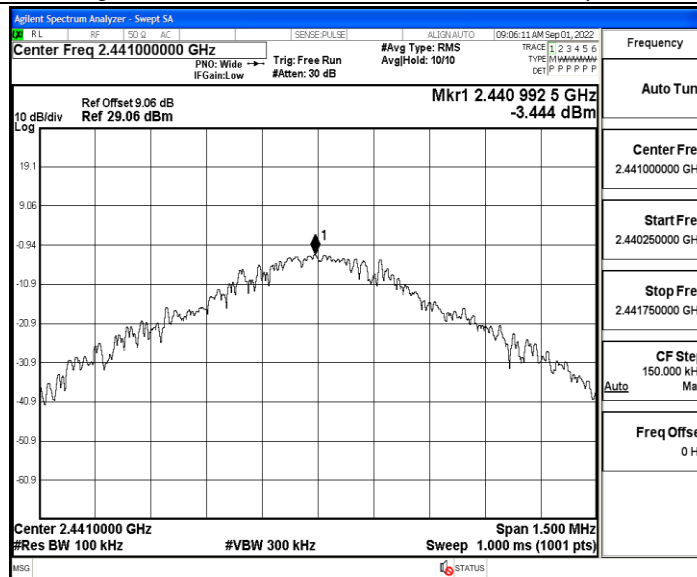
DH5_Ant1_2402_30~1000



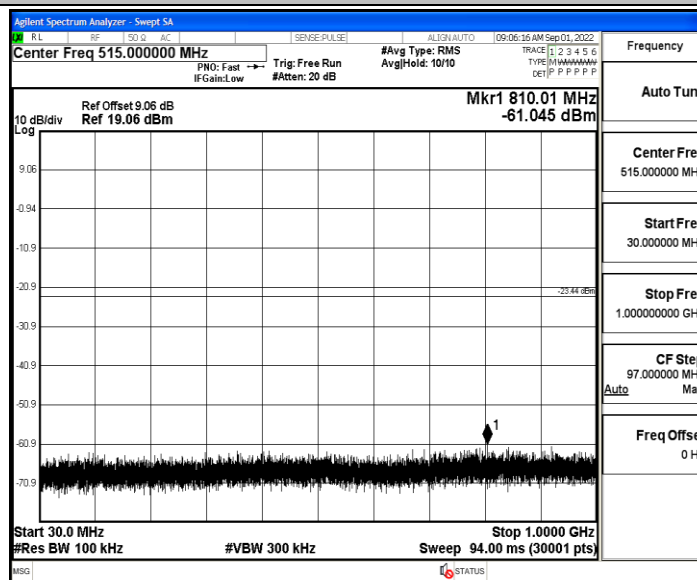
DH5_Ant1_2402_1000~26500



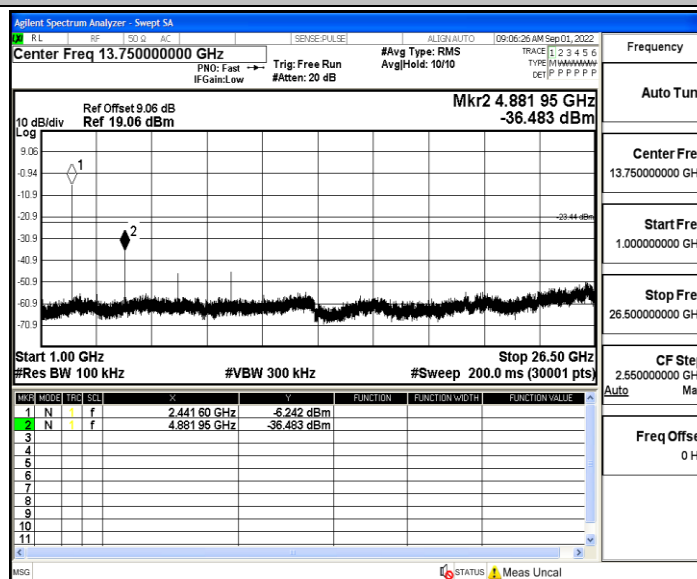
DH5_Ant1_2441_0~Reference



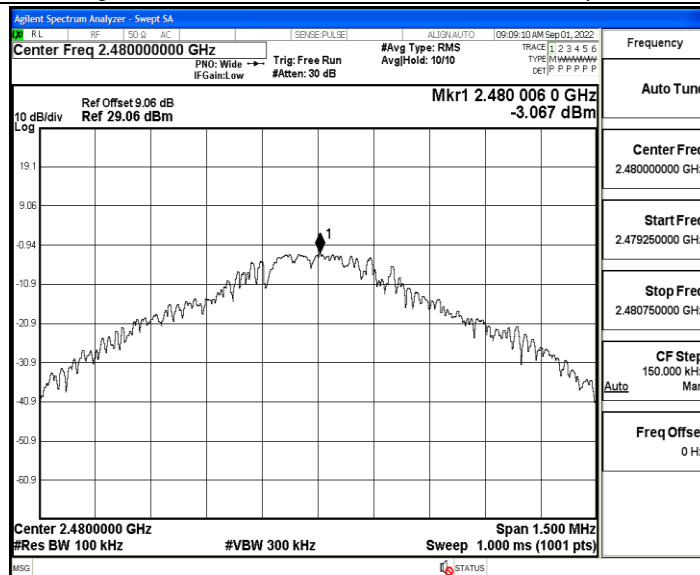
DH5_Ant1_2441_30~1000



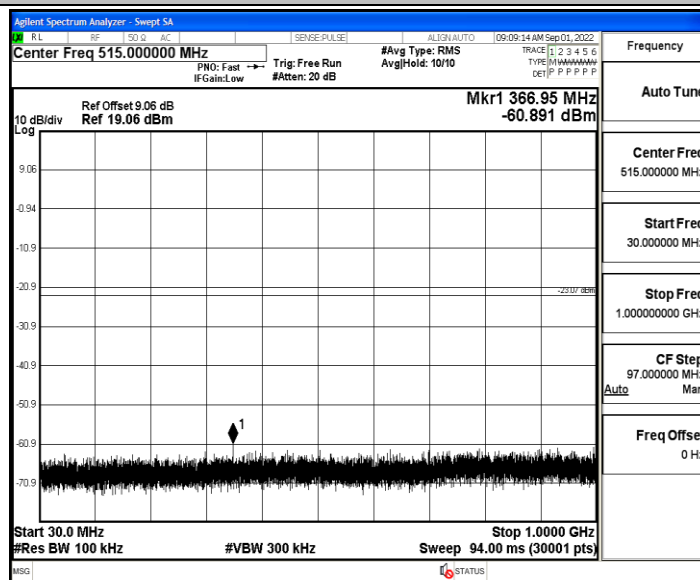
DH5_Ant1_2441_1000~26500



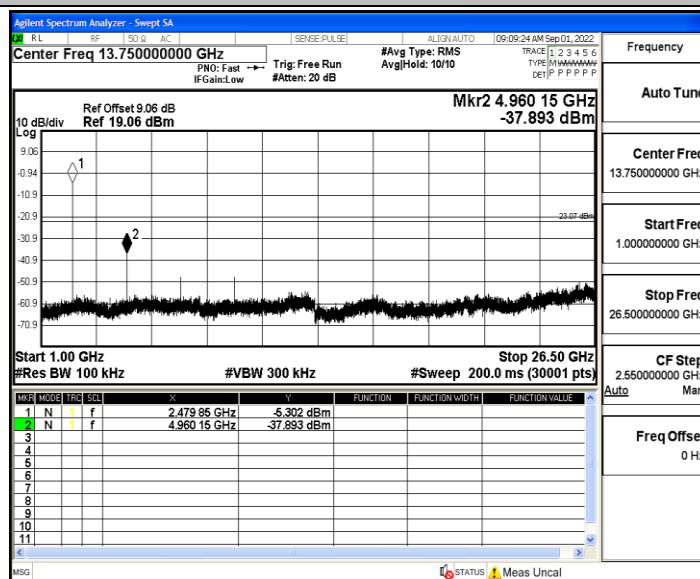
DH5_Ant1_2480_0~Reference



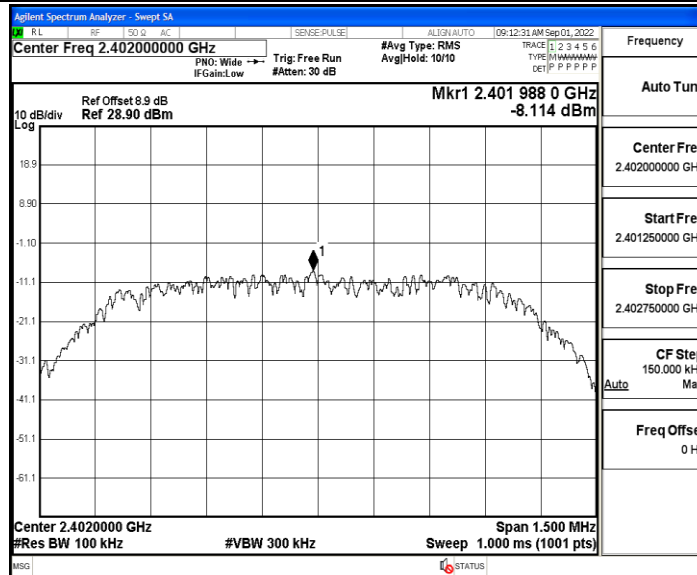
DH5_Ant1_2480_30~1000



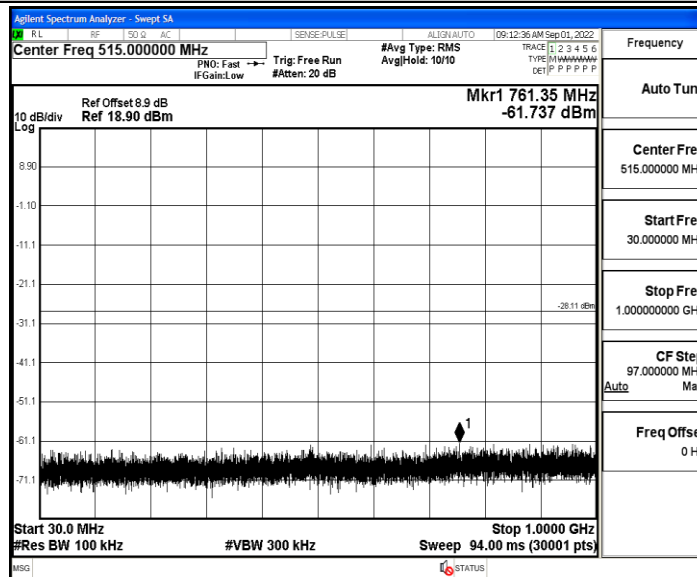
DH5_Ant1_2480_1000~26500



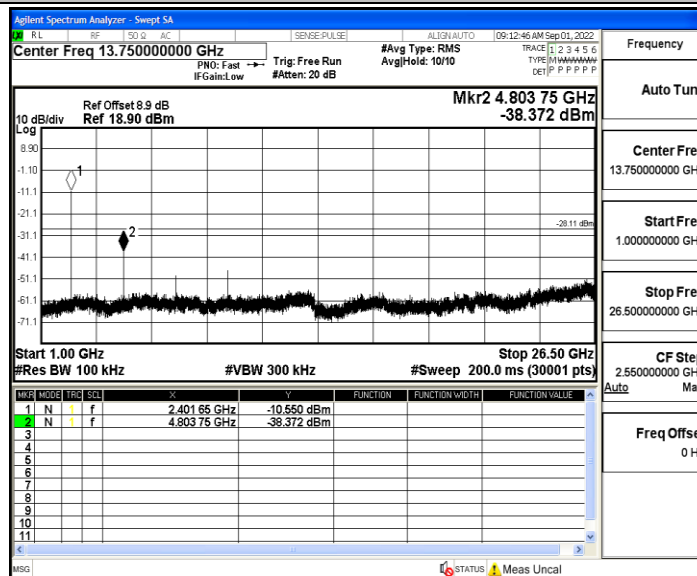
2DH5_Ant1_2402_0~Reference



2DH5_Ant1_2402_30~1000



2DH5_Ant1_2402_1000~26500



2DH5_Ant1_2441_0~Reference