

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

Product Name: TWS EARBUDS

Trade Mark: ARGOMTECH

Test Model: ARG-HS-5020BK

FCC ID: 2AUGW-5020BK

Environmental Conditions

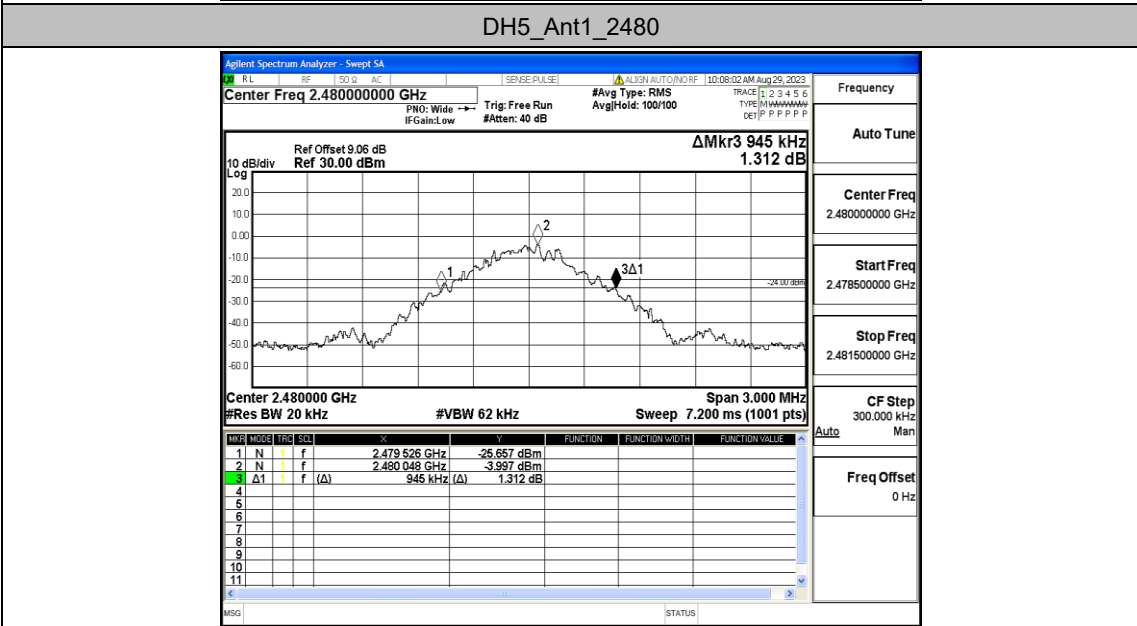
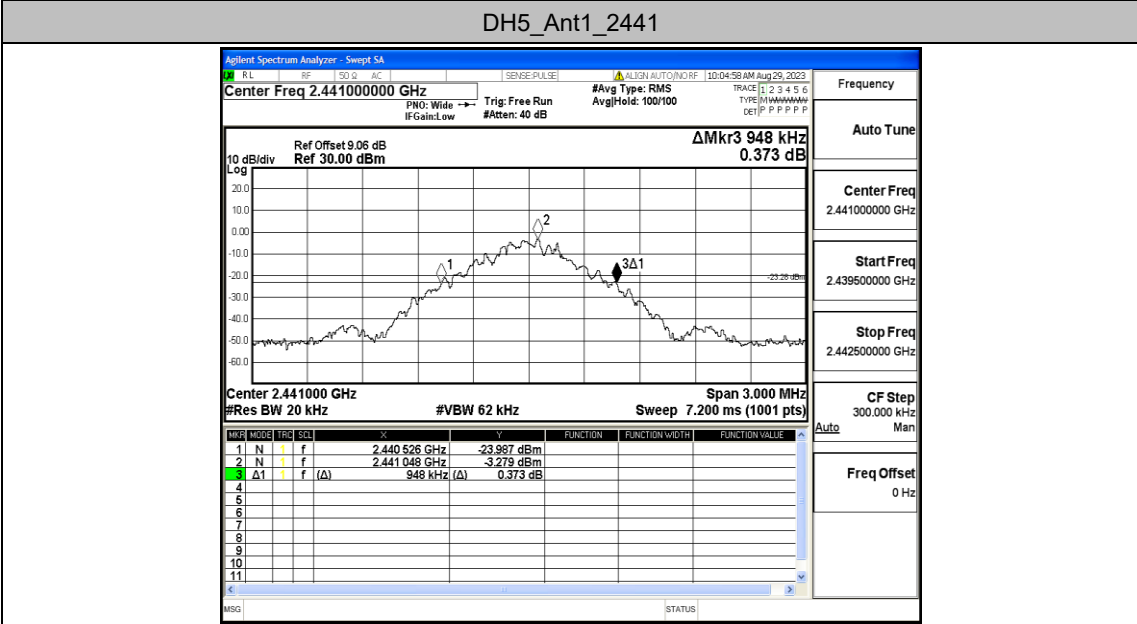
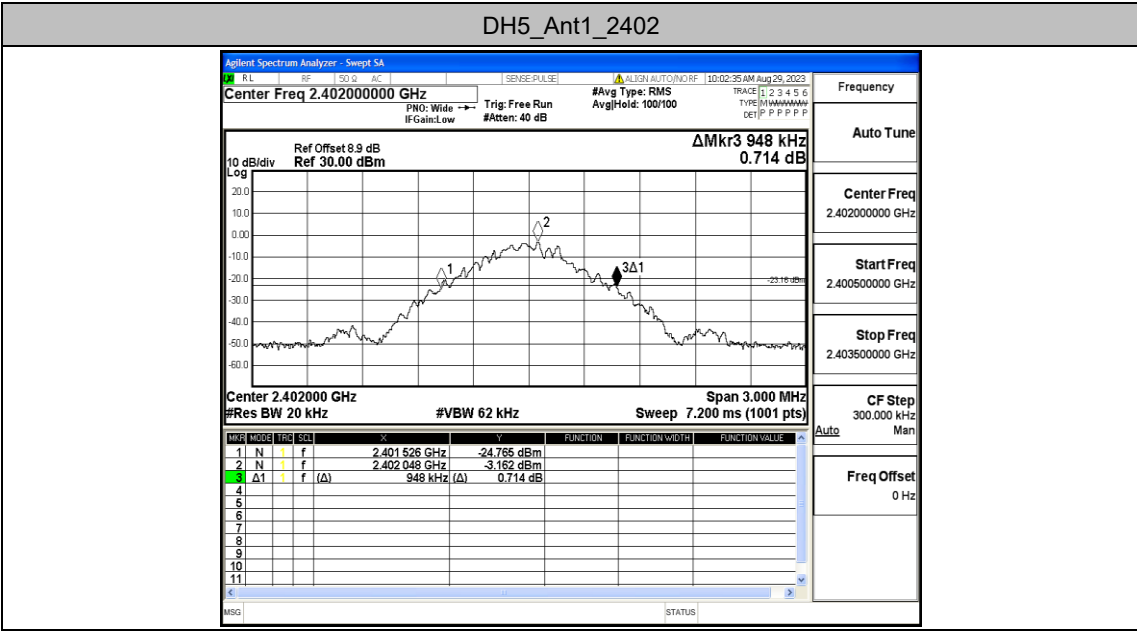
Temperature:	25.5°C
Relative Humidity:	55%
ATM Pressure:	100.0 kPa
Test Engineer:	Anna Hu
Supervised by:	Hugo Chen
NOTE	N/A

Appendix A: 20dB Emission Bandwidth

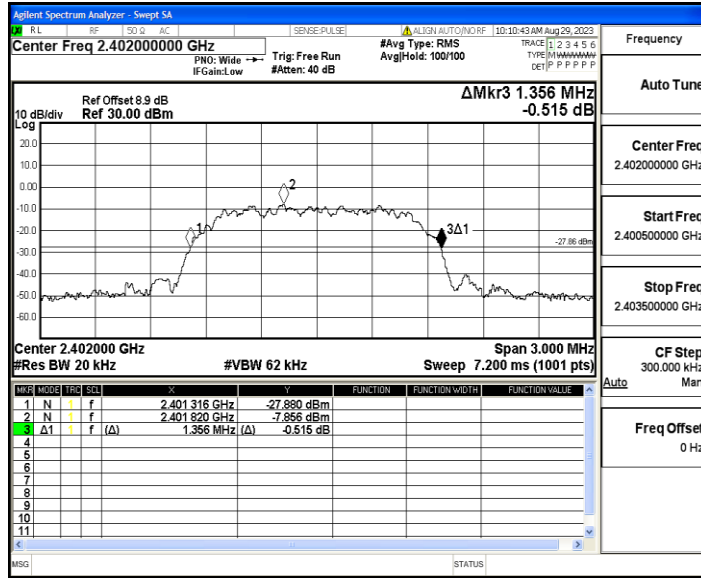
Test Result

TestMode	Antenna	Channel	20db EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.948	2401.526	2402.474	---	---
		2441	0.948	2440.526	2441.474	---	---
		2480	0.945	2479.526	2480.471	---	---
2DH5	Ant1	2402	1.356	2401.316	2402.672	---	---
		2441	1.323	2440.325	2441.648	---	---
		2480	1.335	2479.322	2480.657	---	---
3DH5	Ant1	2402	1.311	2401.334	2402.645	---	---
		2441	1.305	2440.337	2441.642	---	---
		2480	1.323	2479.325	2480.648	---	---

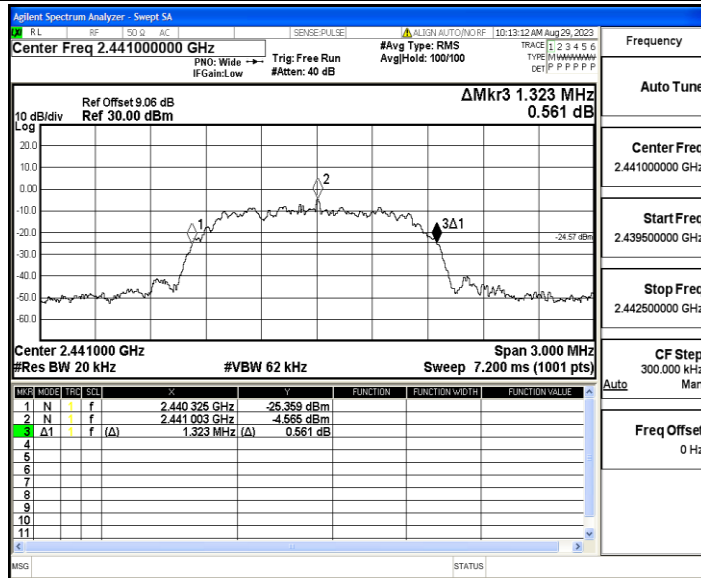
Test Graphs



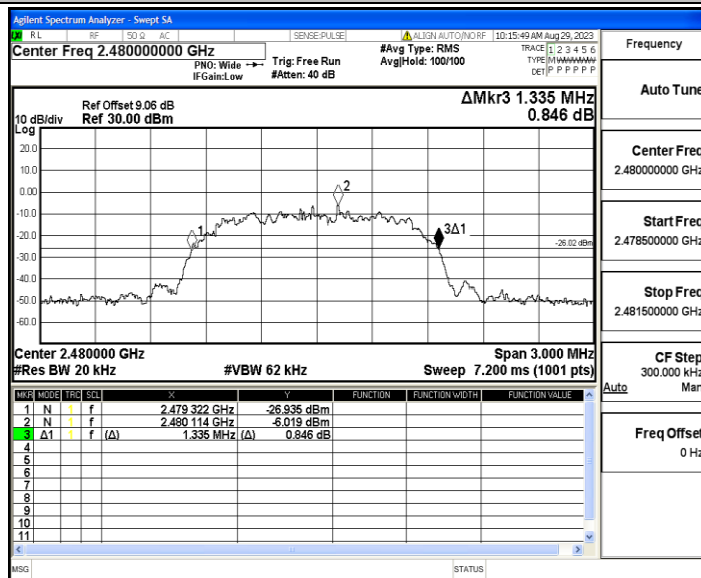
2DH5_Ant1_2402



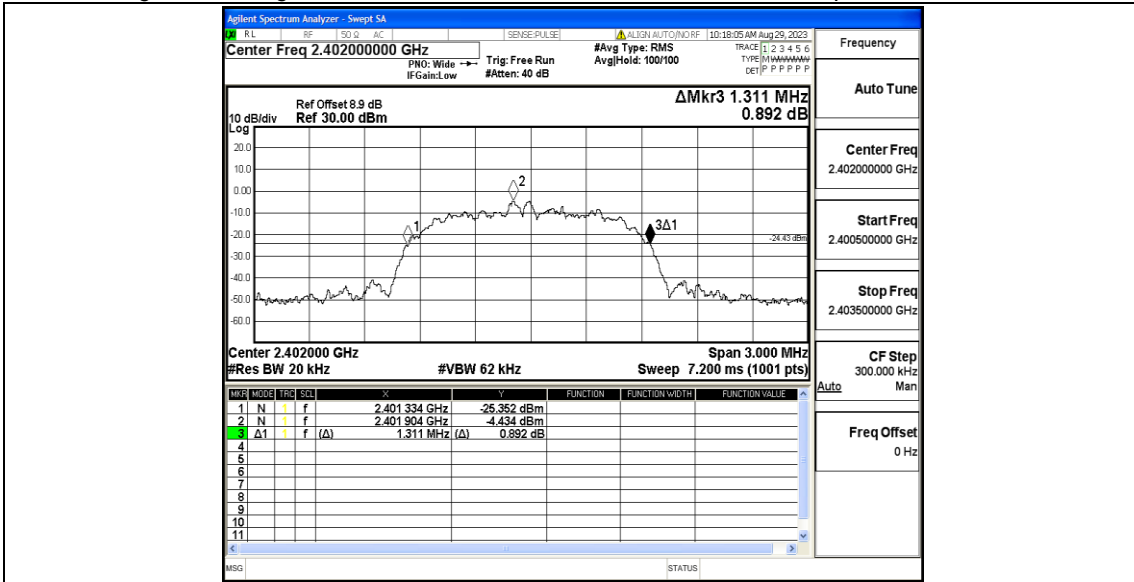
2DH5_Ant1_2441



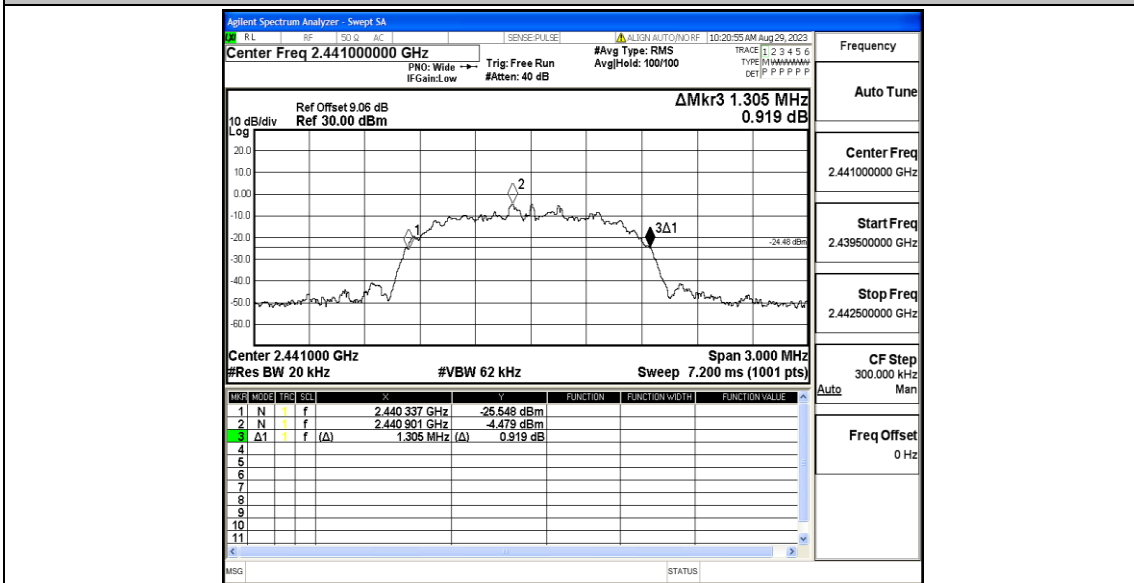
2DH5_Ant1_2480



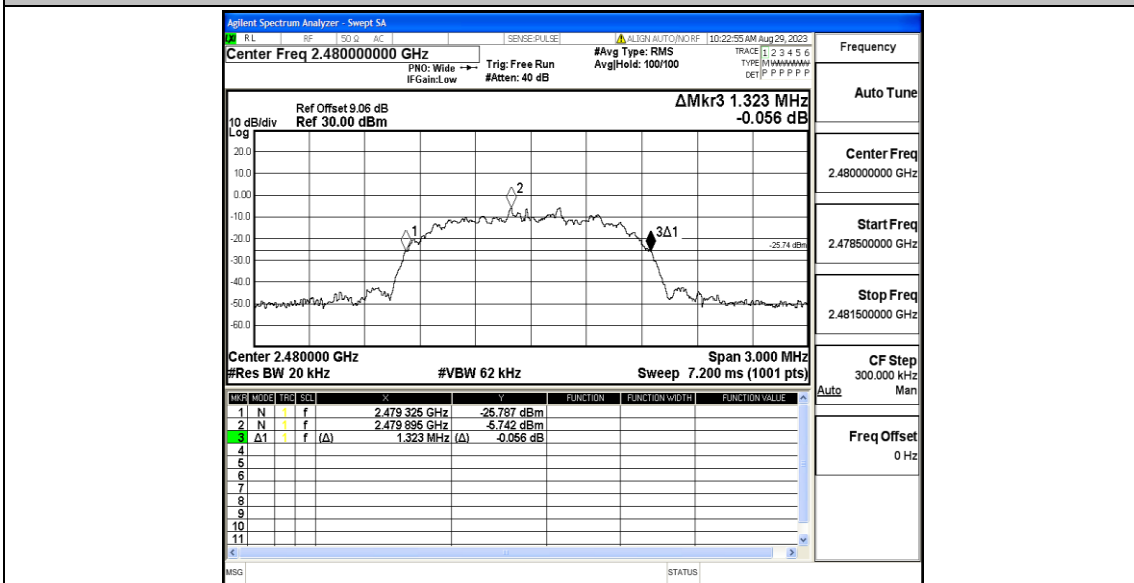
3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480

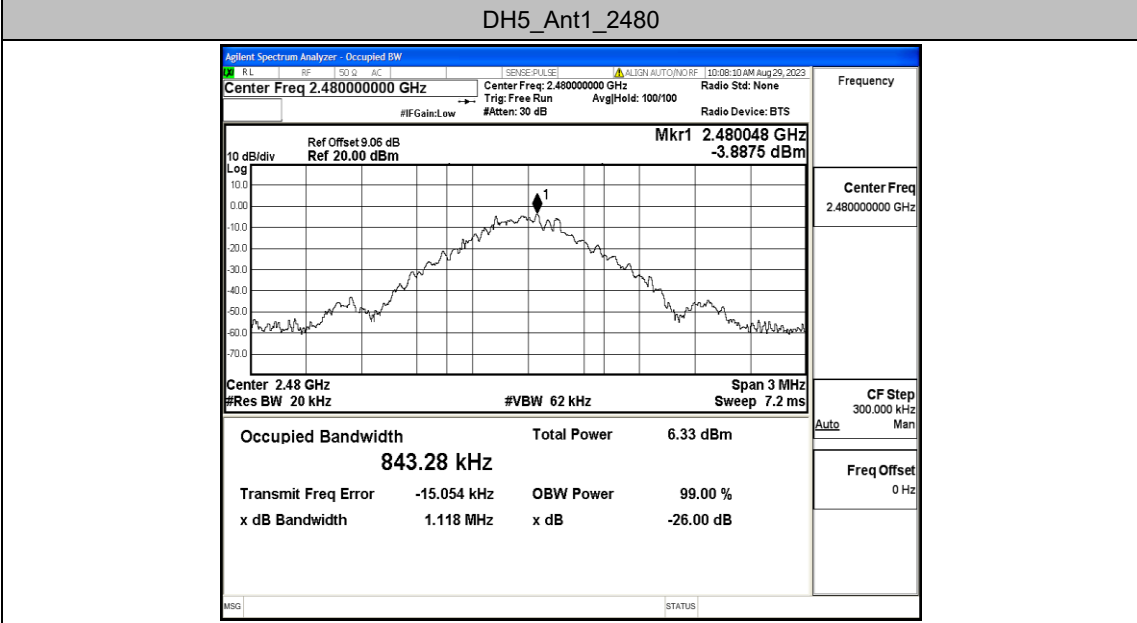
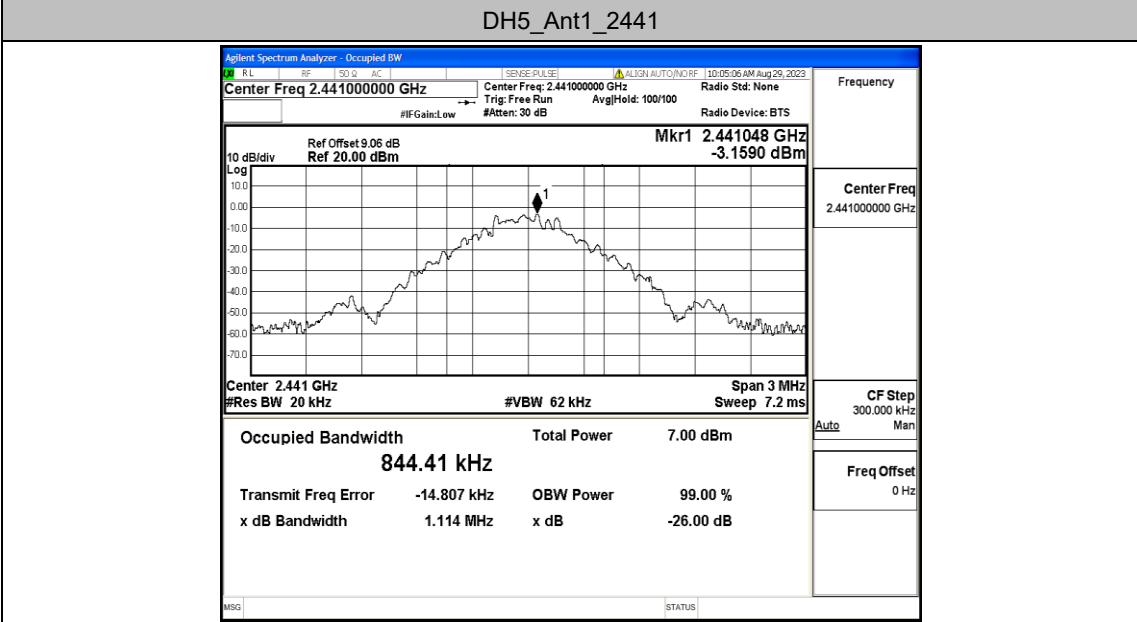
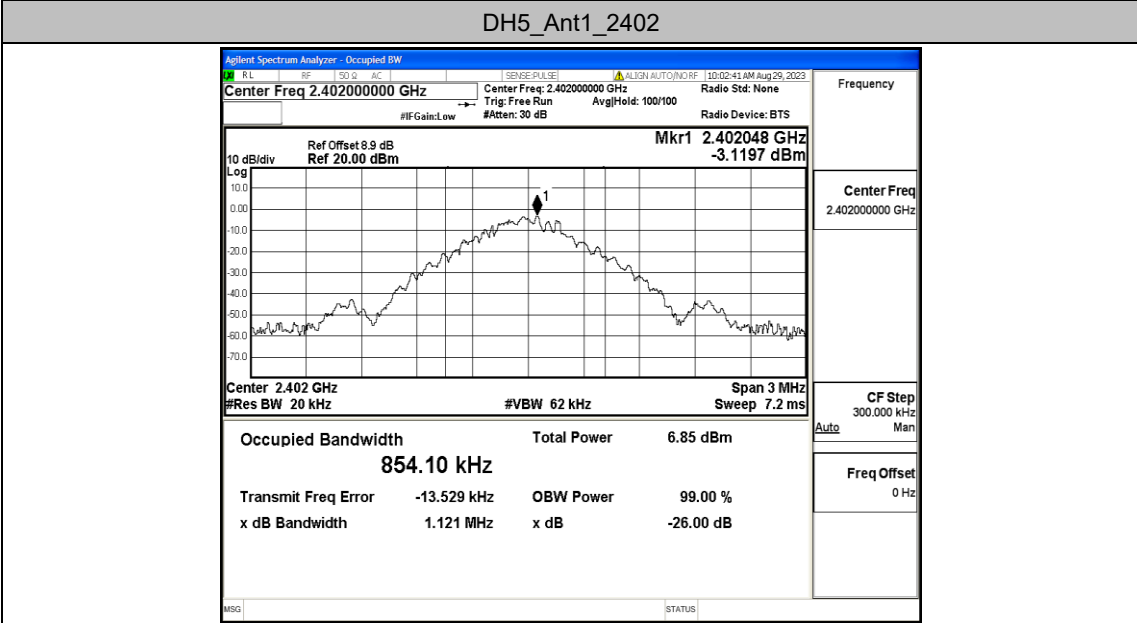


Appendix B: Occupied Channel Bandwidth

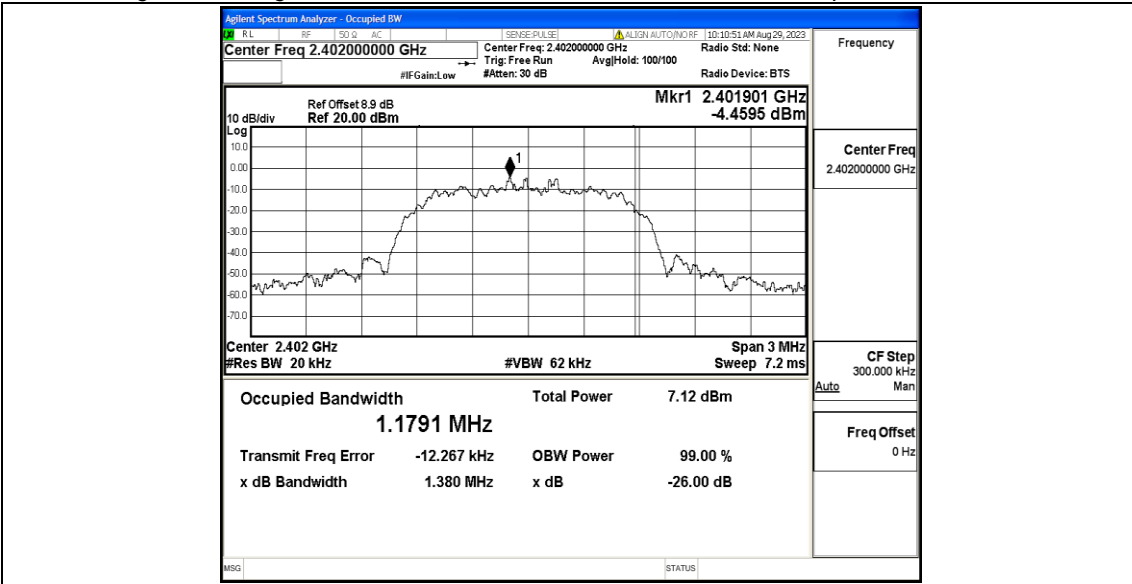
Test Result

TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.85410	2401.5594	2402.4135	---	---
		2441	0.84441	2440.5630	2441.4074	---	---
		2480	0.84328	2479.5633	2480.4066	---	---
2DH5	Ant1	2402	1.1791	2401.3982	2402.5773	---	---
		2441	1.1860	2440.3942	2441.5802	---	---
		2480	1.1708	2479.4018	2480.5726	---	---
3DH5	Ant1	2402	1.1876	2401.3885	2402.5761	---	---
		2441	1.1886	2440.3867	2441.5753	---	---
		2480	1.1780	2479.3953	2480.5733	---	---

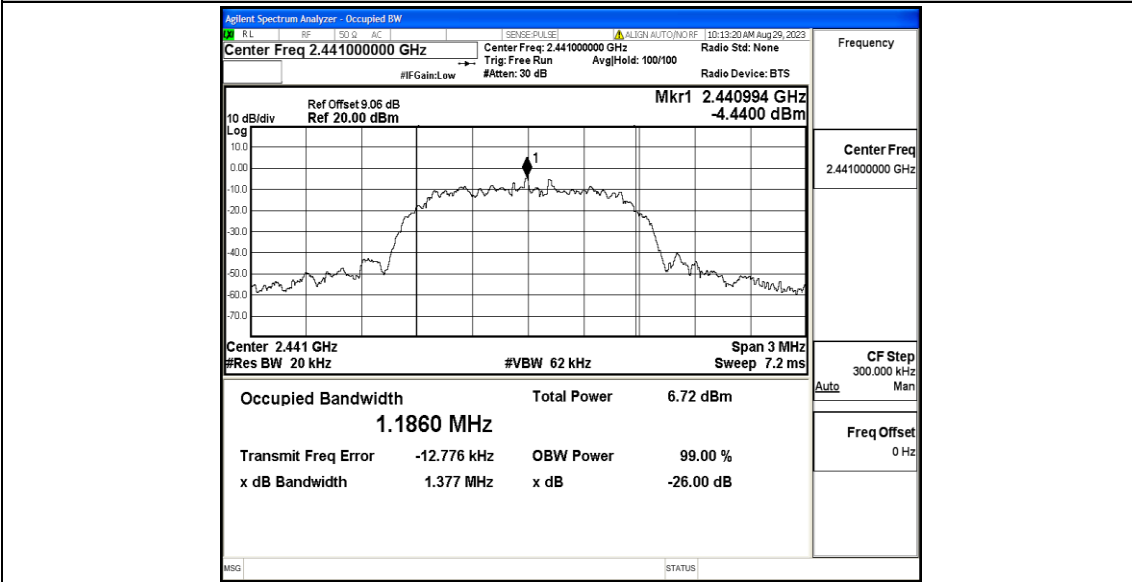
Test Graphs



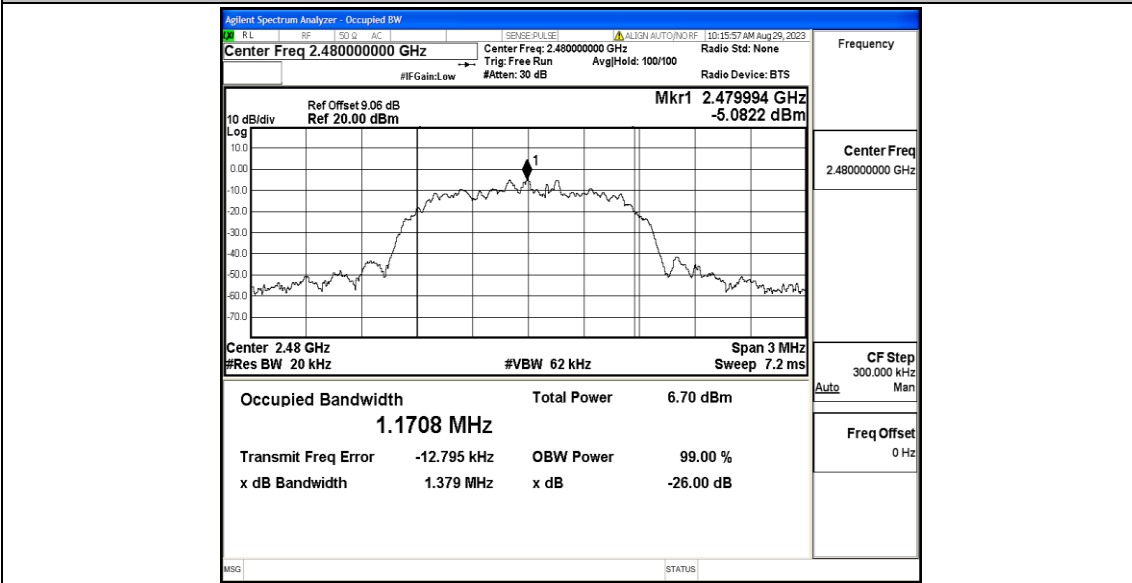
2DH5_Ant1_2402



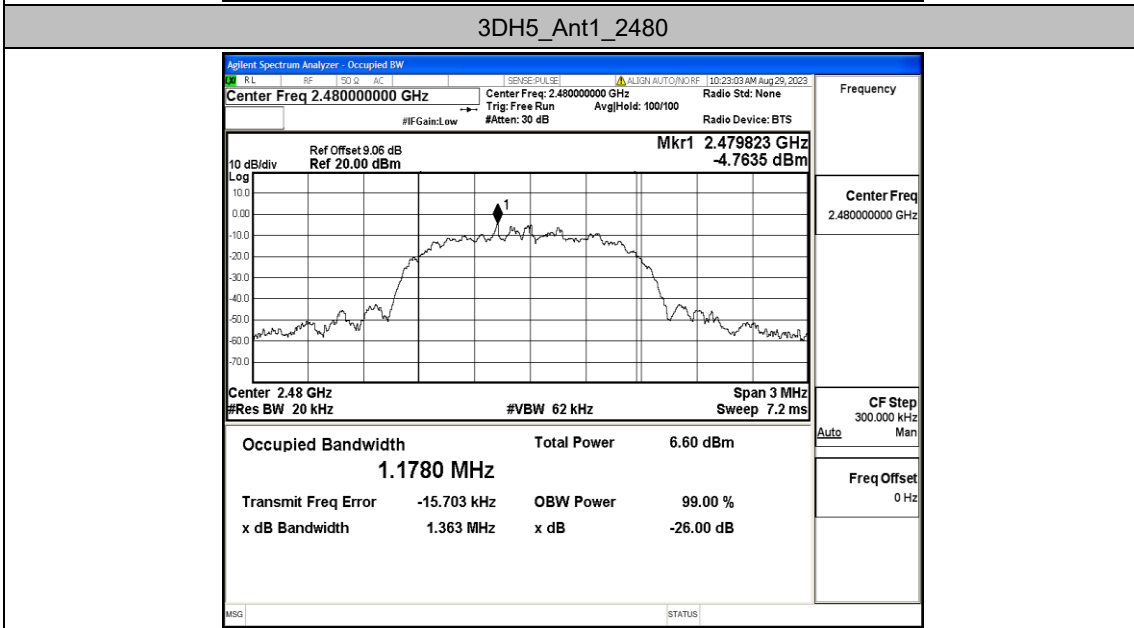
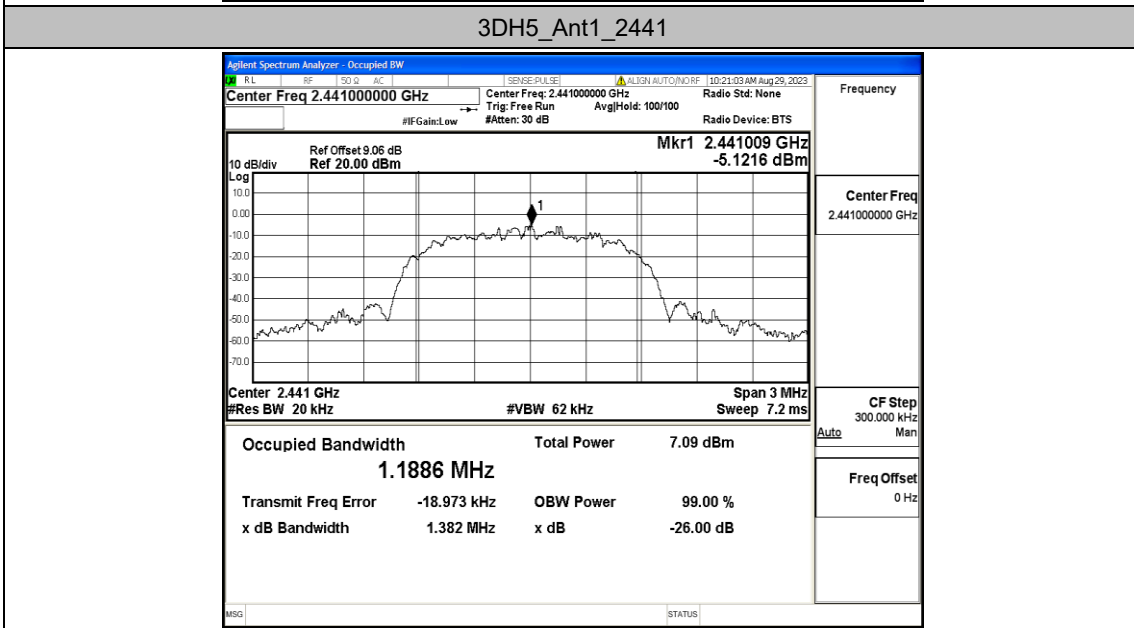
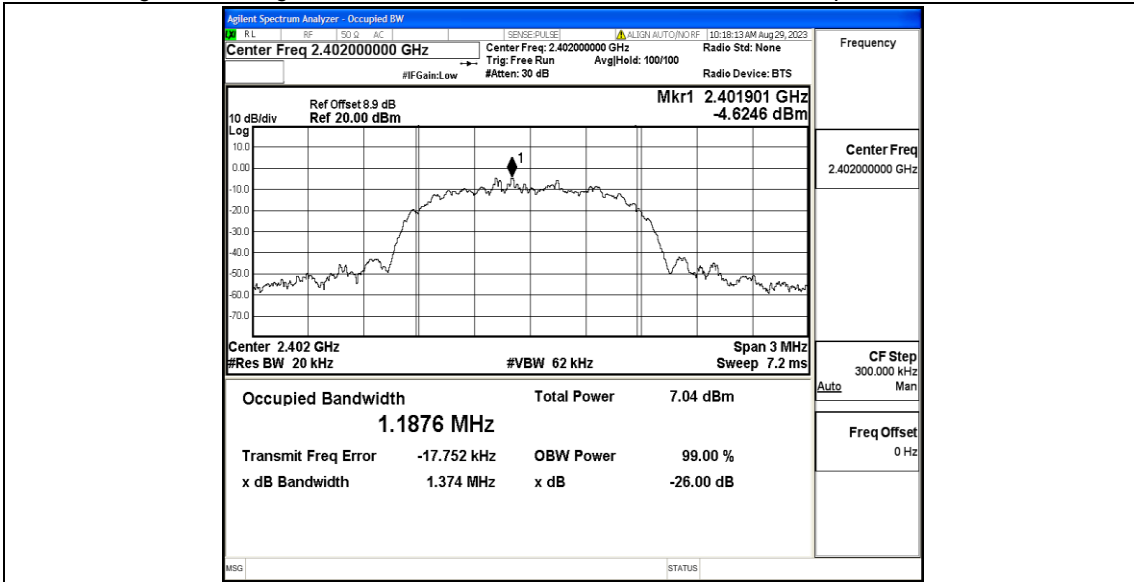
2DH5_Ant1_2441



2DH5_Ant1_2480



3DH5_Ant1_2402

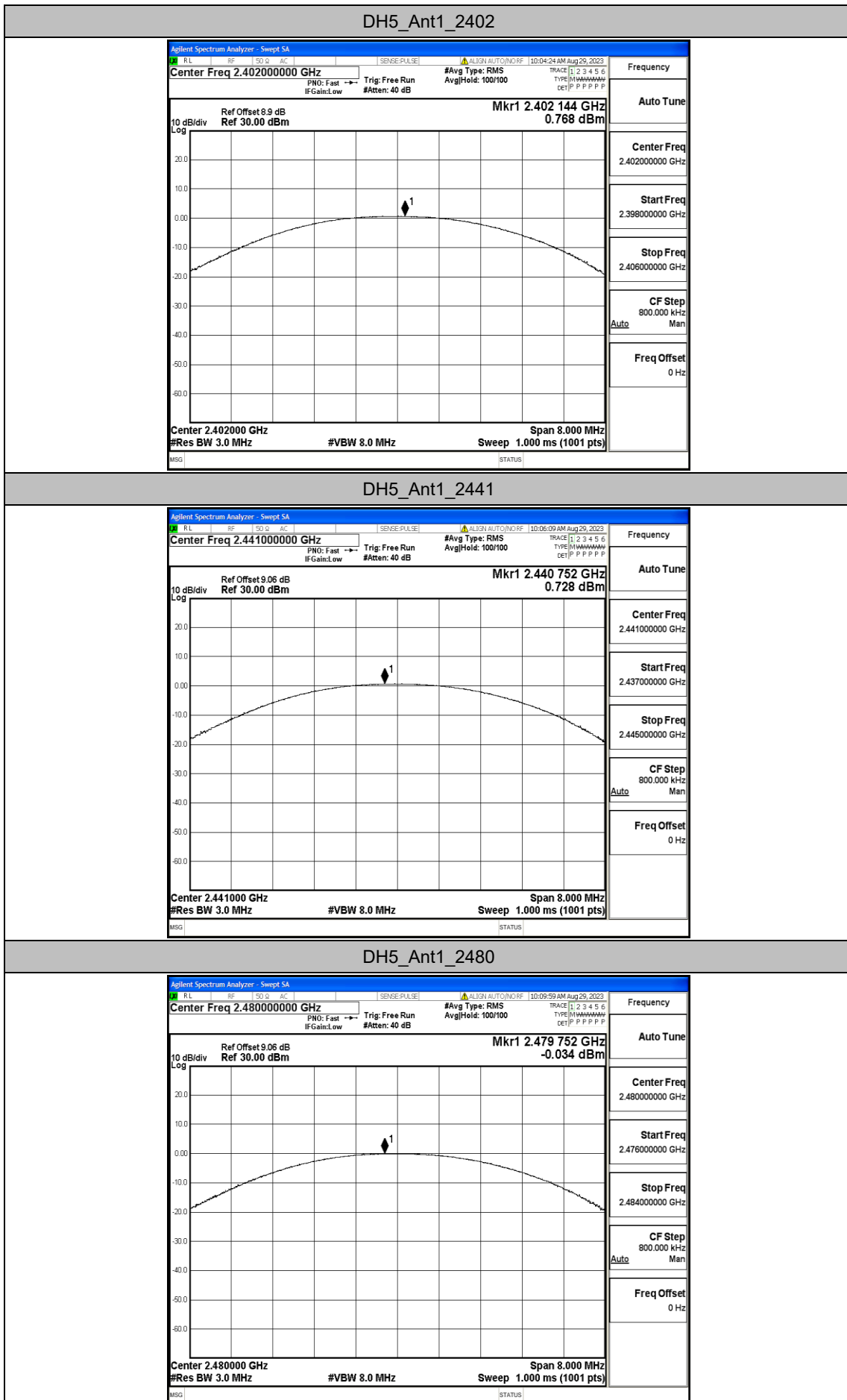


Appendix C: Maximum Peak conducted output power

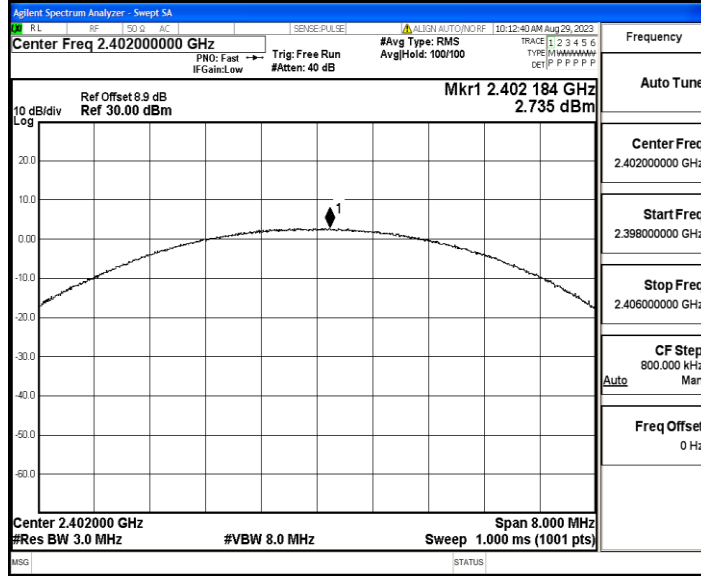
Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
DH5	Ant1	2402	0.77	≤30	PASS
		2441	0.73	≤30	PASS
		2480	-0.03	≤30	PASS
2DH5	Ant1	2402	2.74	≤20.97	PASS
		2441	2.71	≤20.97	PASS
		2480	2.09	≤20.97	PASS
3DH5	Ant1	2402	2.99	≤20.97	PASS
		2441	3.08	≤20.97	PASS
		2480	2.24	≤20.97	PASS

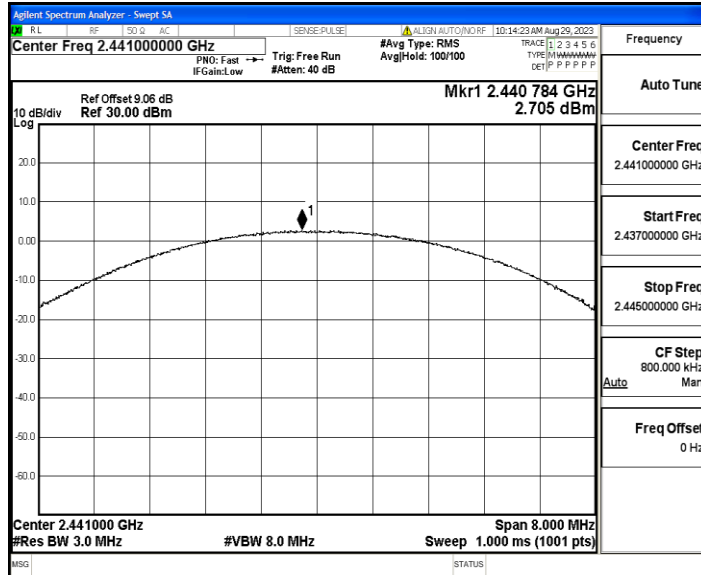
Test Graphs



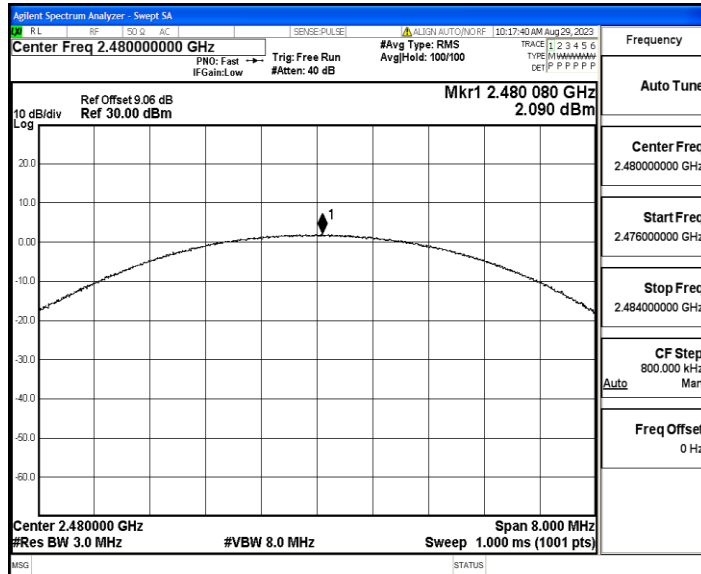
2DH5_Ant1_2402



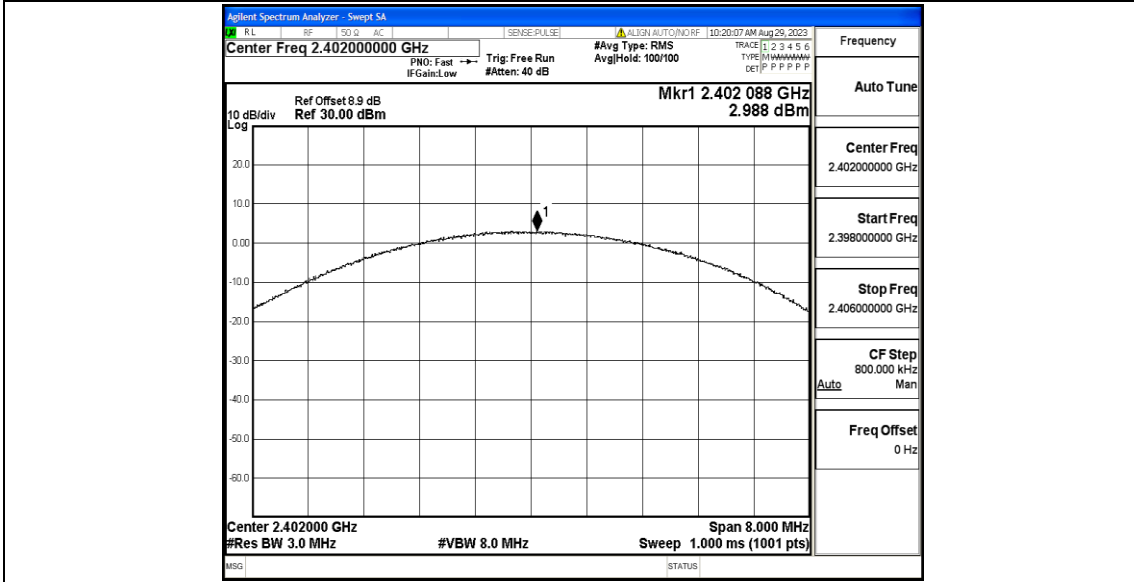
2DH5_Ant1_2441



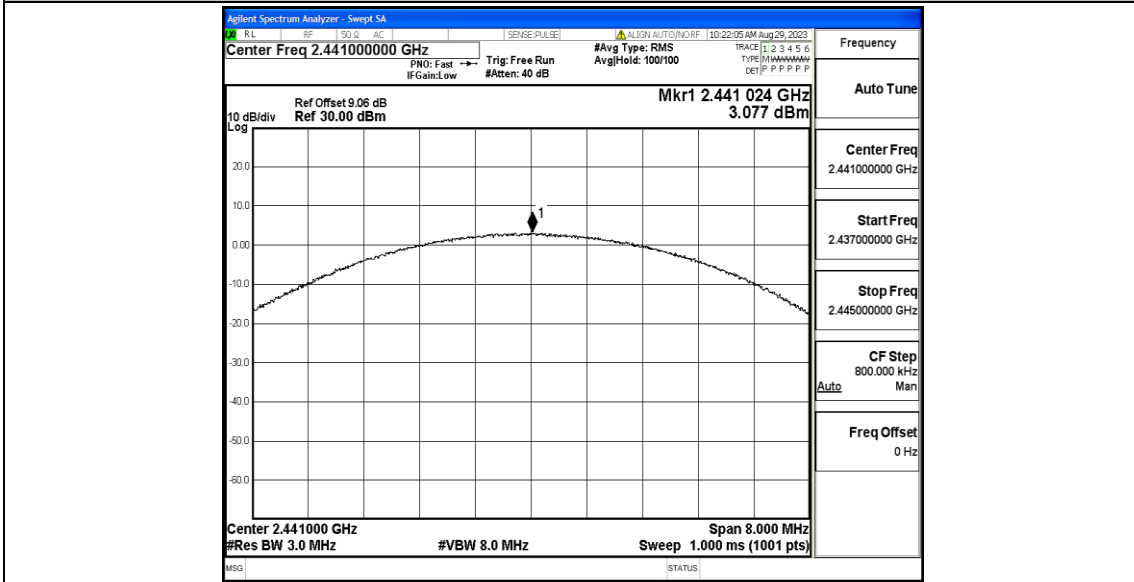
2DH5_Ant1_2480



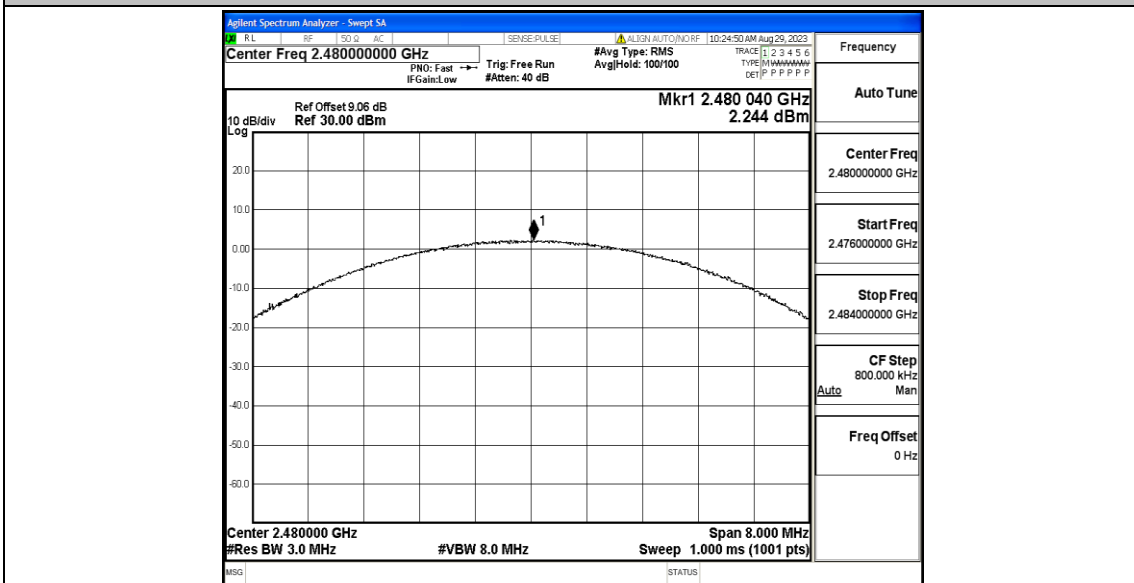
3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480

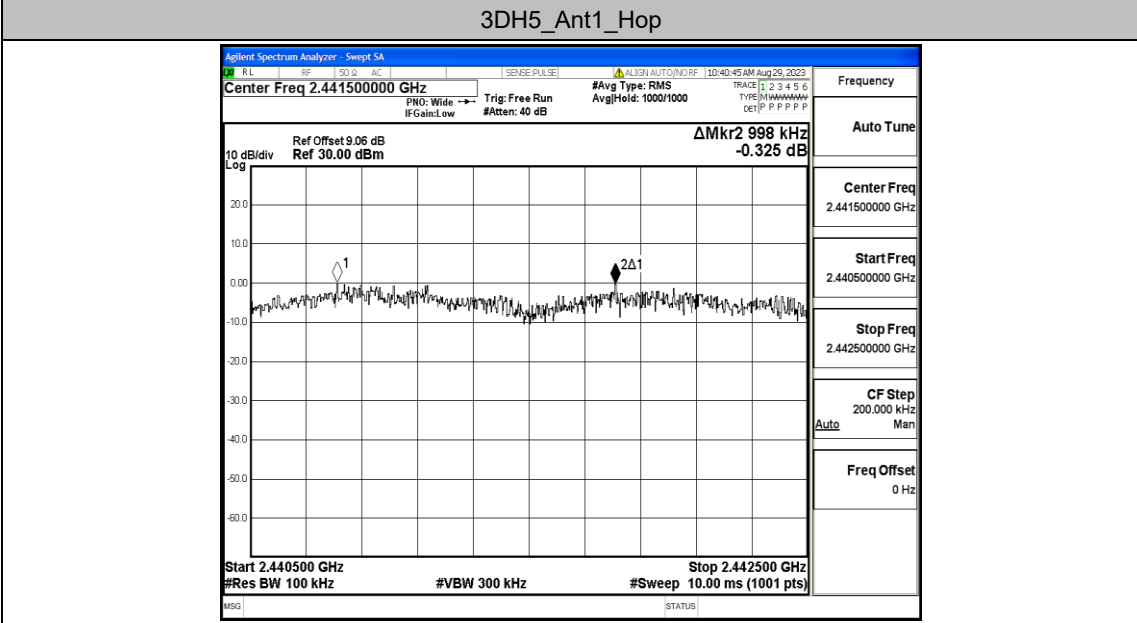
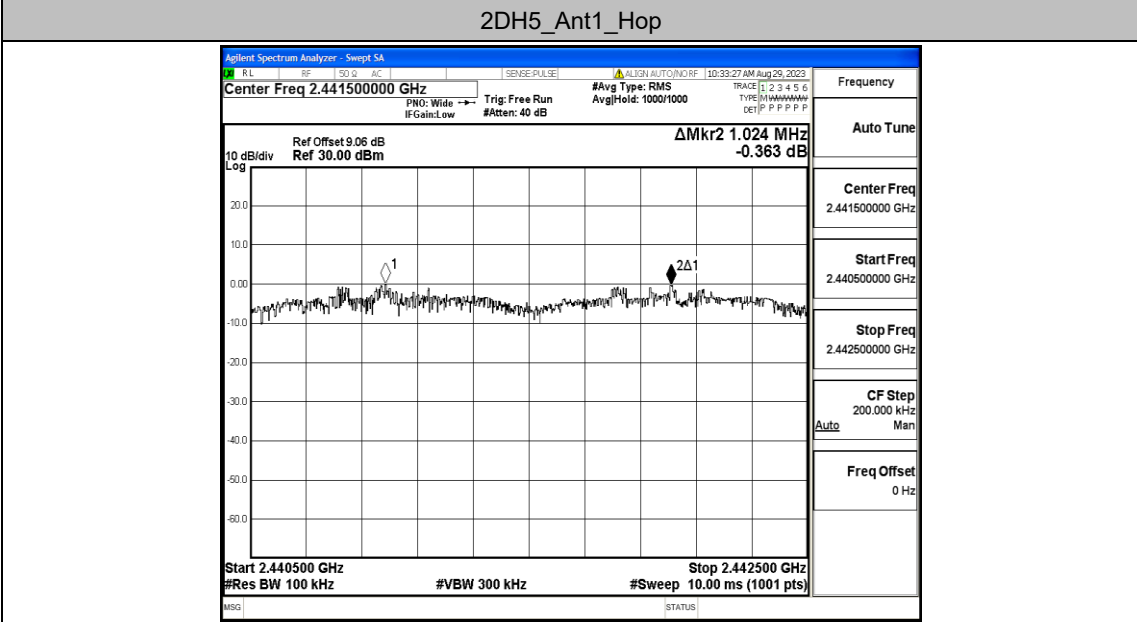
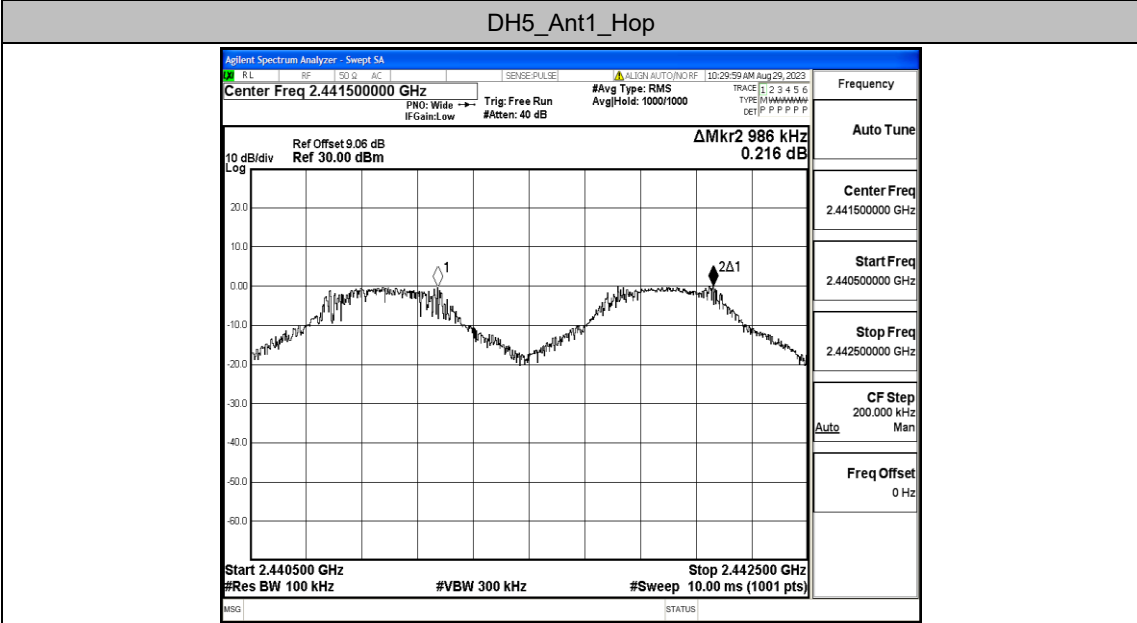


Appendix D: Carrier frequency separation

Test Result

TestMode	Antenna	Channel	Result[MHz]	Limit[MHz]	Verdict
DH5	Ant1	Hop	0.986	≥ 0.948	PASS
2DH5	Ant1	Hop	1.024	≥ 0.904	PASS
3DH5	Ant1	Hop	0.998	≥ 0.882	PASS

Test Graphs

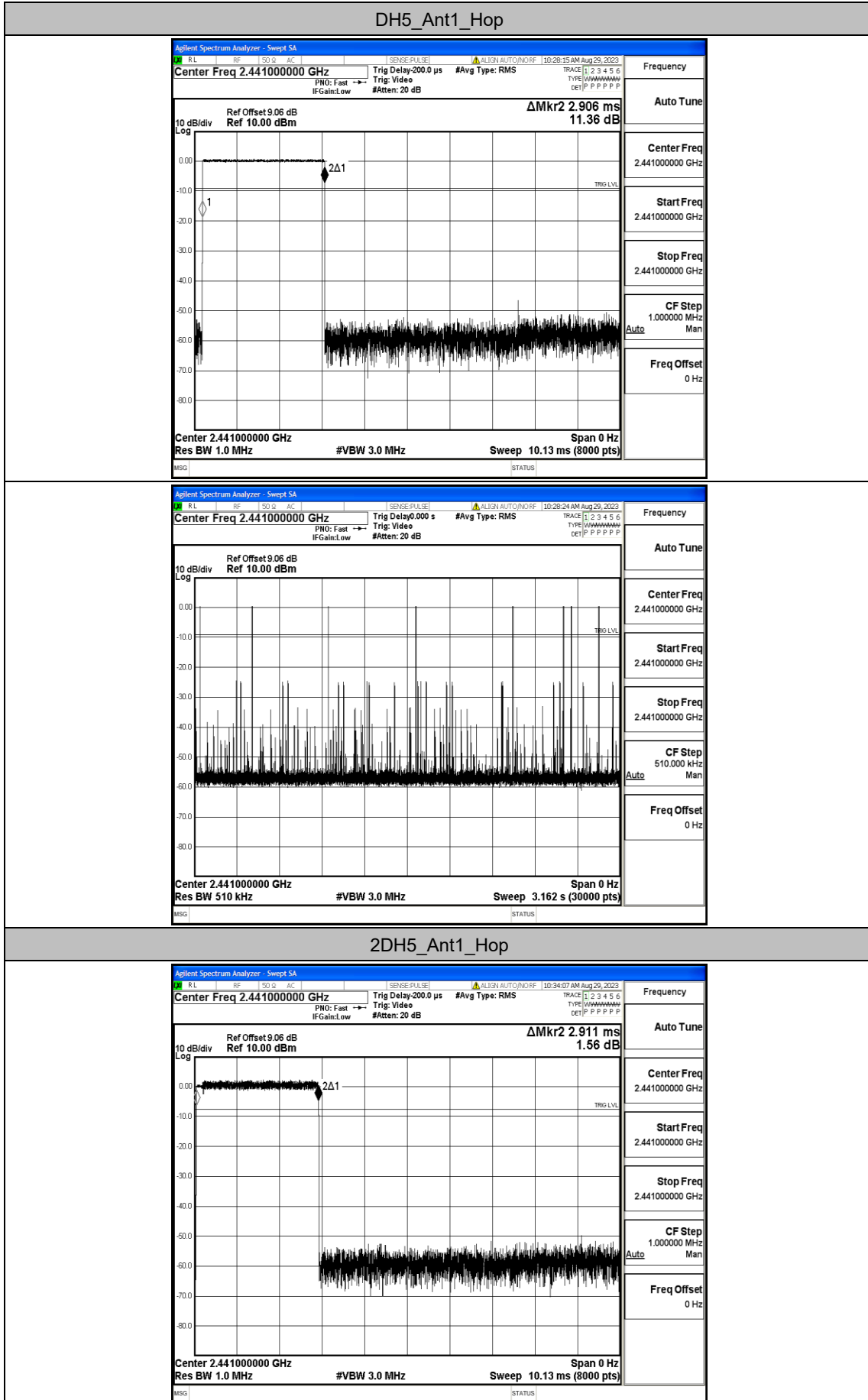


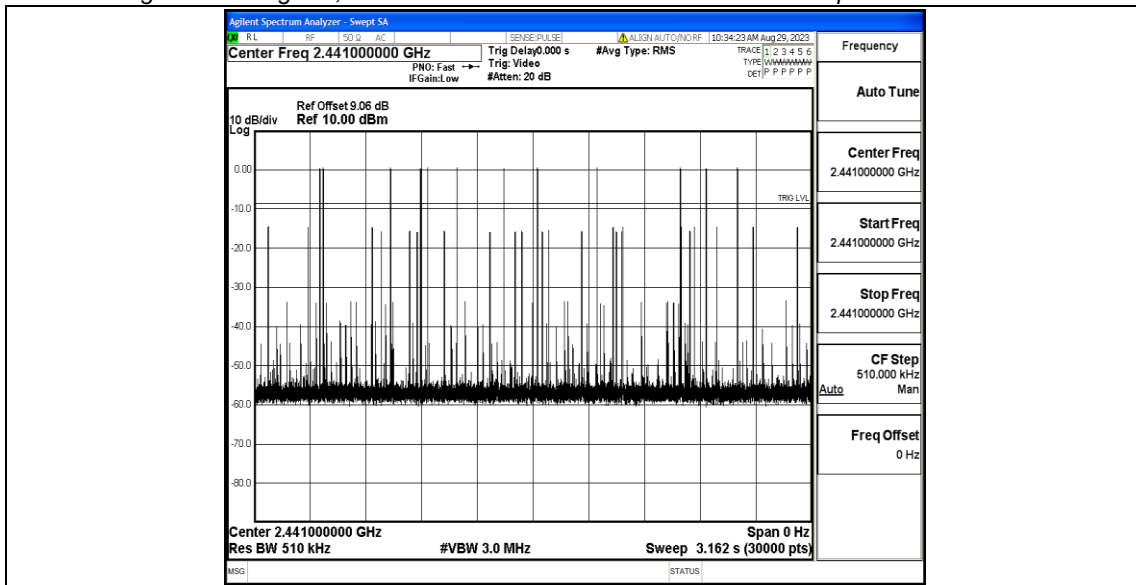
Appendix E: Time of occupancy

Test Result

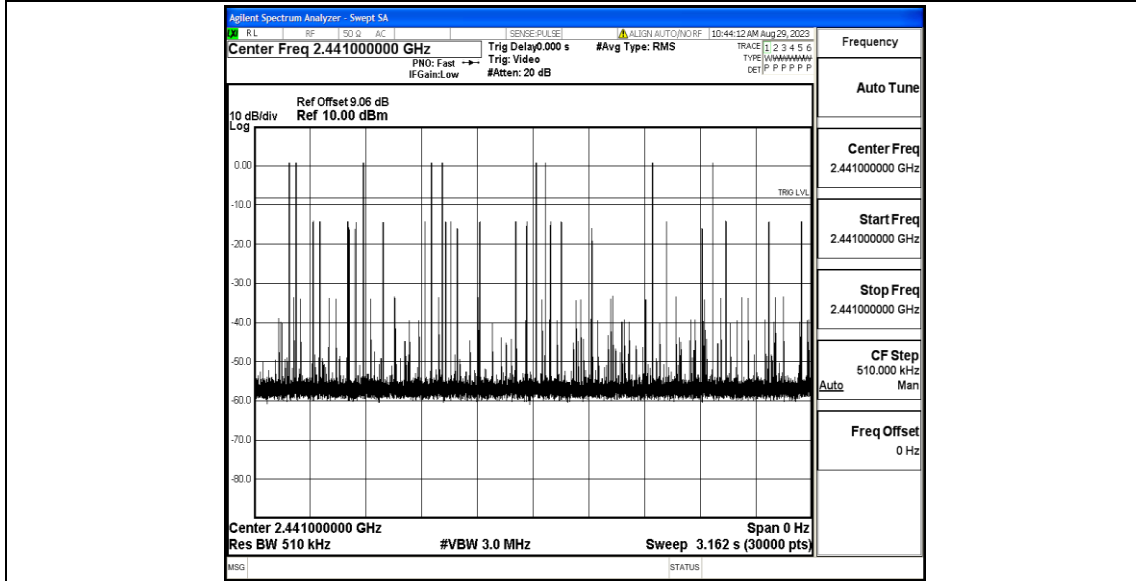
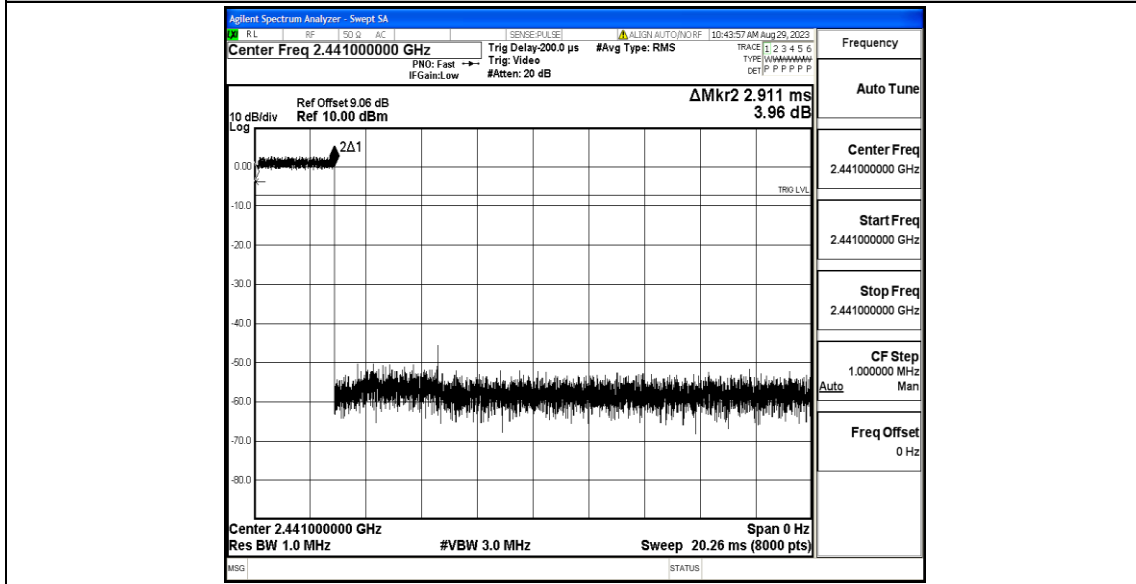
TestMode	Antenna	Channel	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH5	Ant1	Hop	2.906	100	0.291	≤0.4	PASS
2DH5	Ant1	Hop	2.911	130	0.378	≤0.4	PASS
3DH5	Ant1	Hop	2.911	100	0.291	≤0.4	PASS

Test Graphs





3DH5_Ant1_Hop

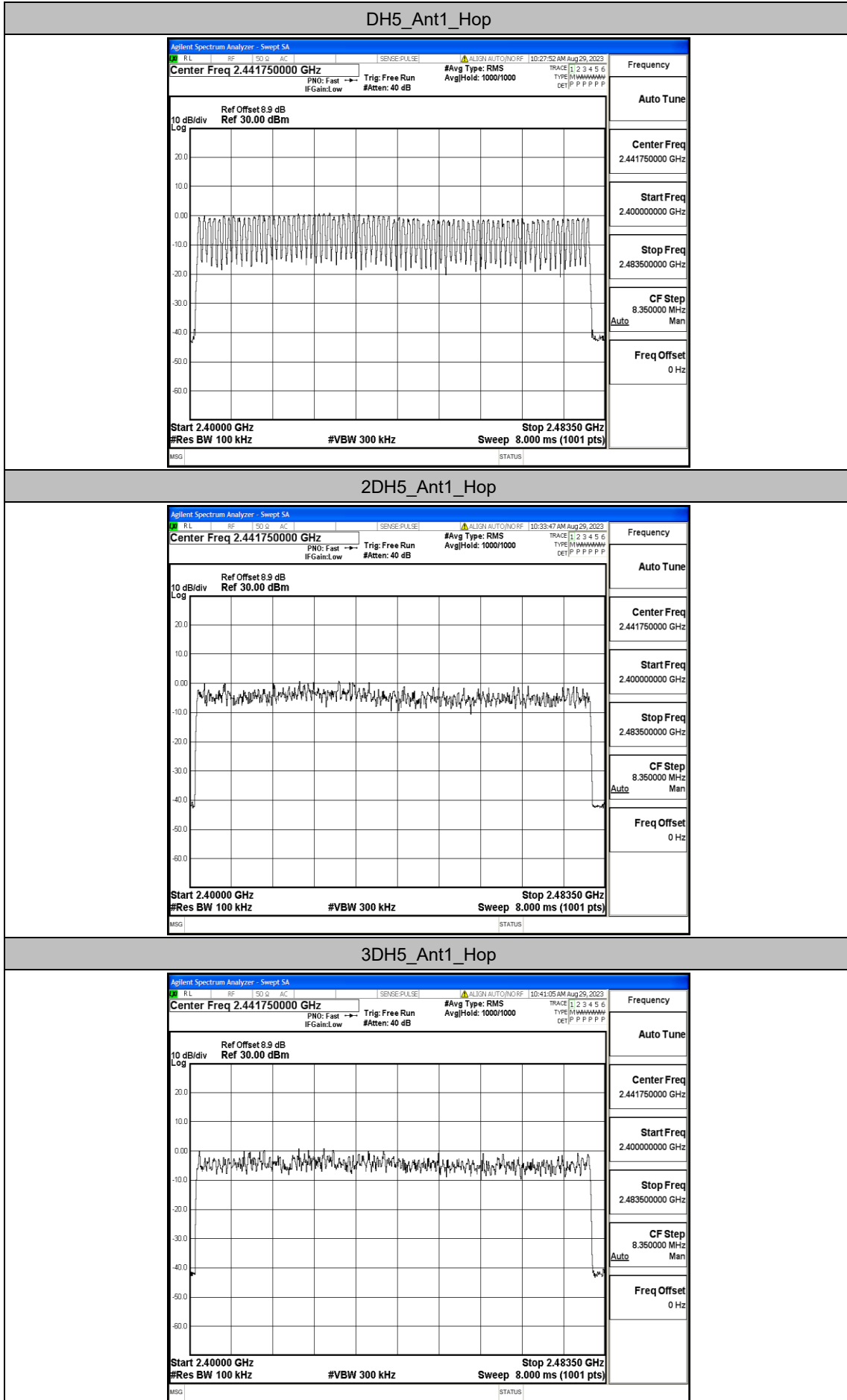


Appendix F: Number of hopping channels

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

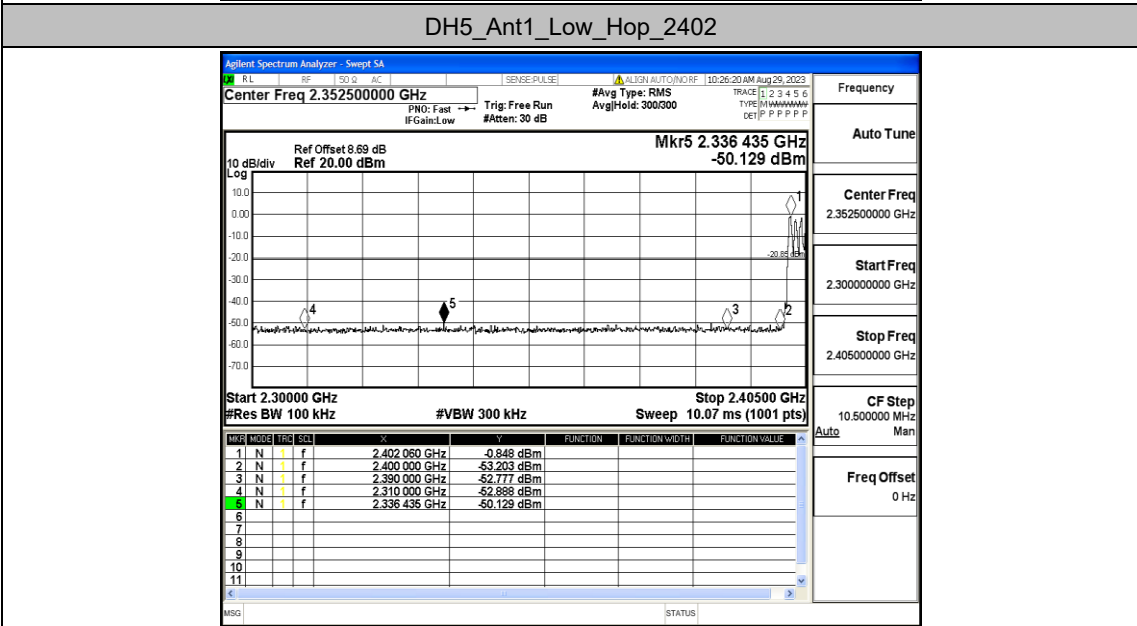
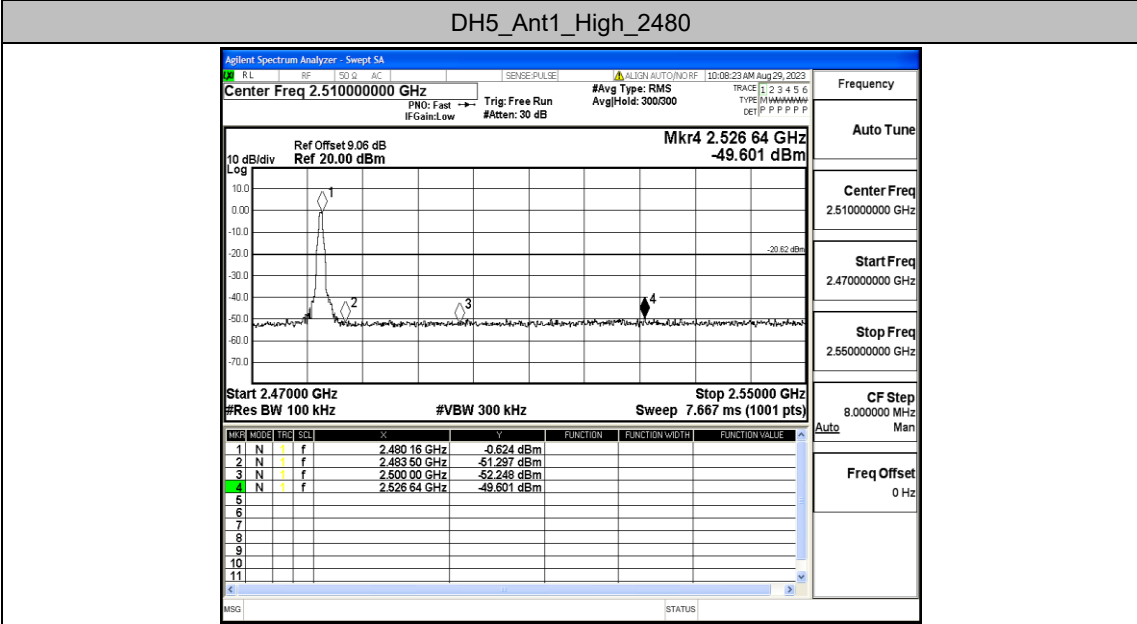
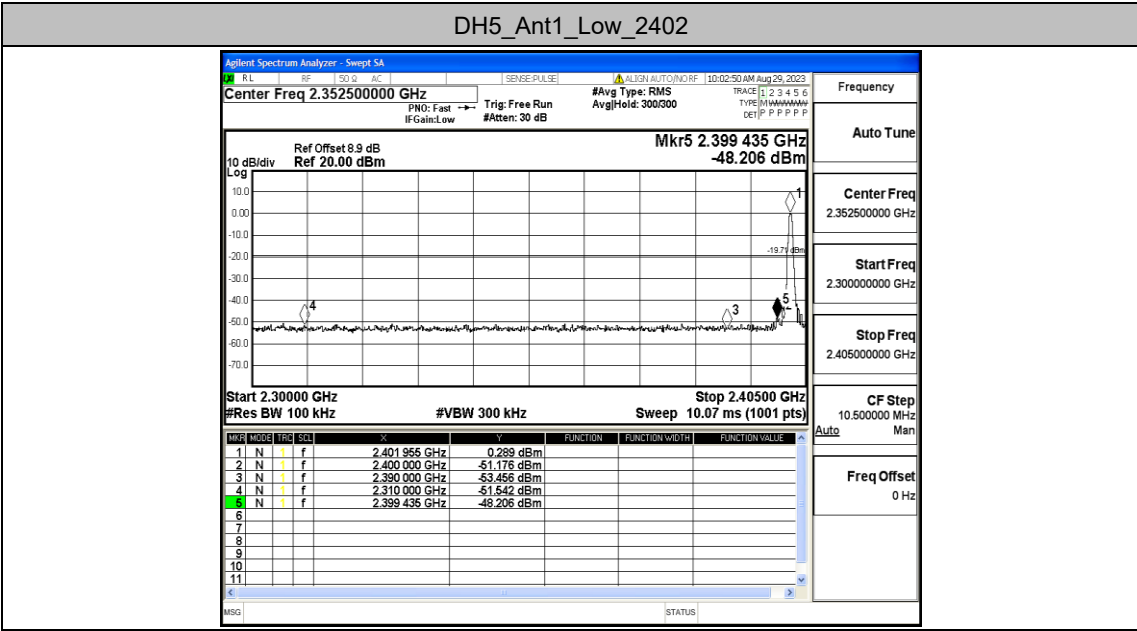


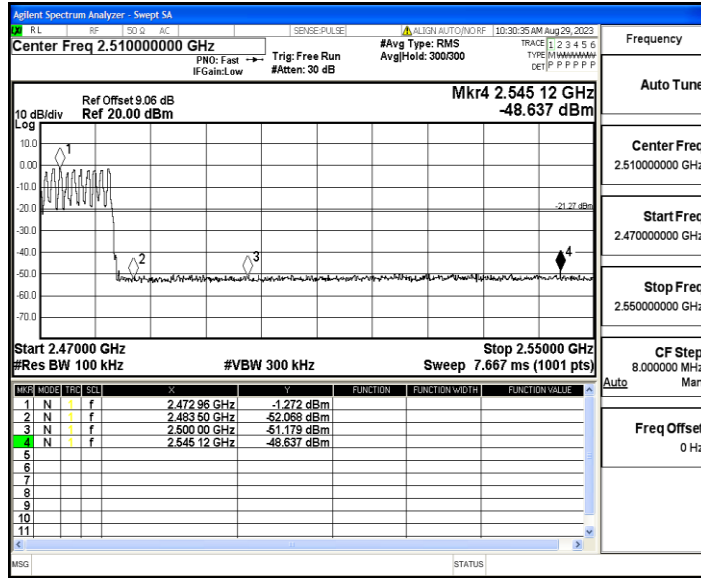
Appendix G: Band edge measurements

Test Result

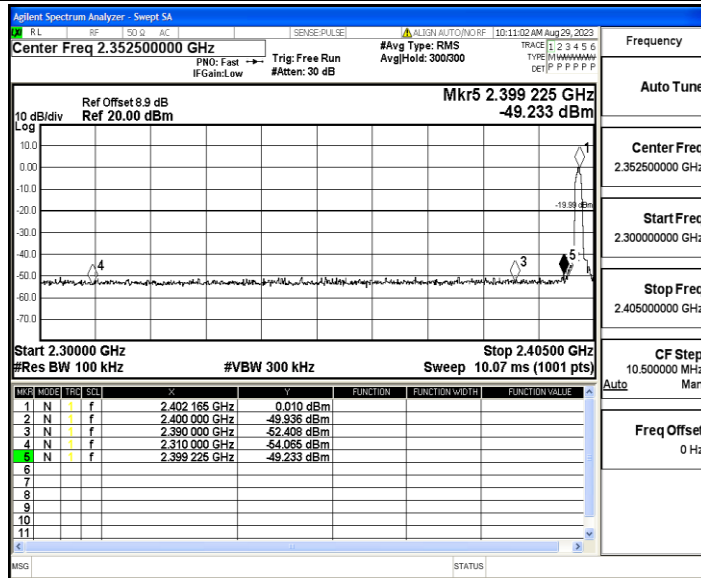
TestMode	Antenna	ChName	Channel	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	0.29	-48.21	≤-19.71	PASS
		High	2480	-0.62	-49.6	≤-20.62	PASS
		Low	Hop_2402	-0.85	-50.13	≤-20.85	PASS
		High	Hop_2480	-1.27	-48.64	≤-21.27	PASS
2DH5	Ant1	Low	2402	0.01	-49.23	≤-19.99	PASS
		High	2480	-0.54	-49.15	≤-20.54	PASS
		Low	Hop_2402	-2.77	-50.95	≤-22.77	PASS
		High	Hop_2480	-1.21	-48.86	≤-21.21	PASS
3DH5	Ant1	Low	2402	0.13	-46.68	≤-19.87	PASS
		High	2480	-0.60	-48.85	≤-20.6	PASS
		Low	Hop_2402	-1.52	-50.51	≤-21.52	PASS
		High	Hop_2480	-2.70	-49.39	≤-22.7	PASS

Test Graphs

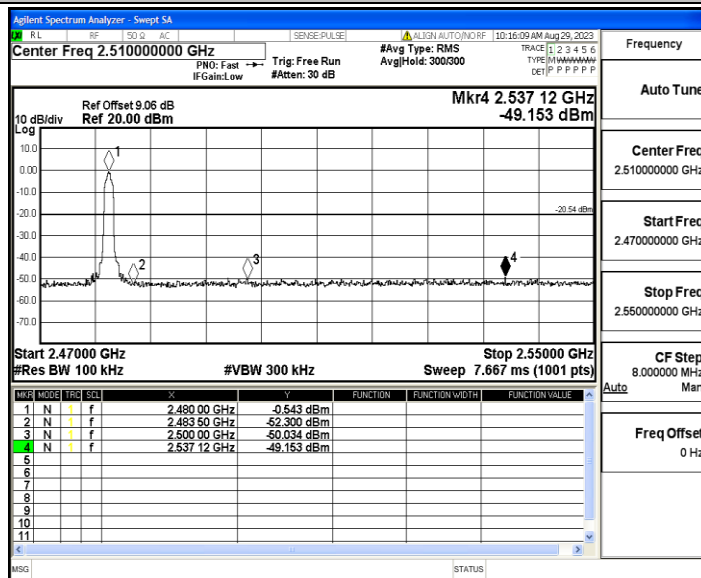




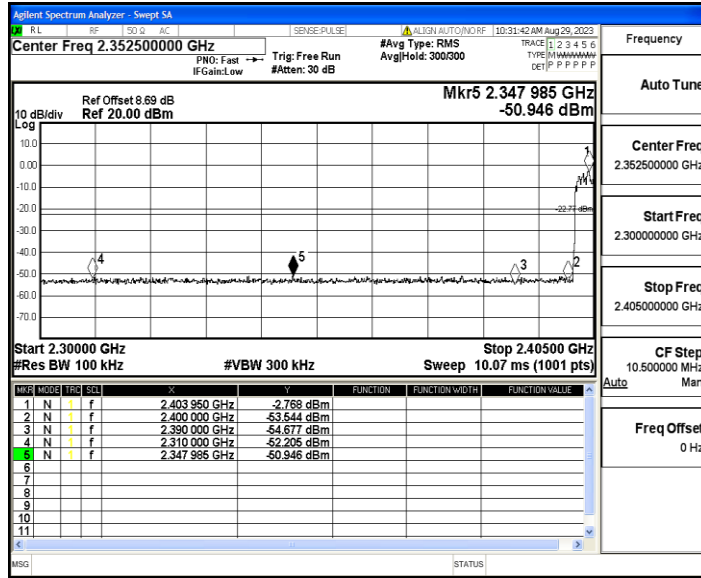
2DH5_Ant1_Low_2402



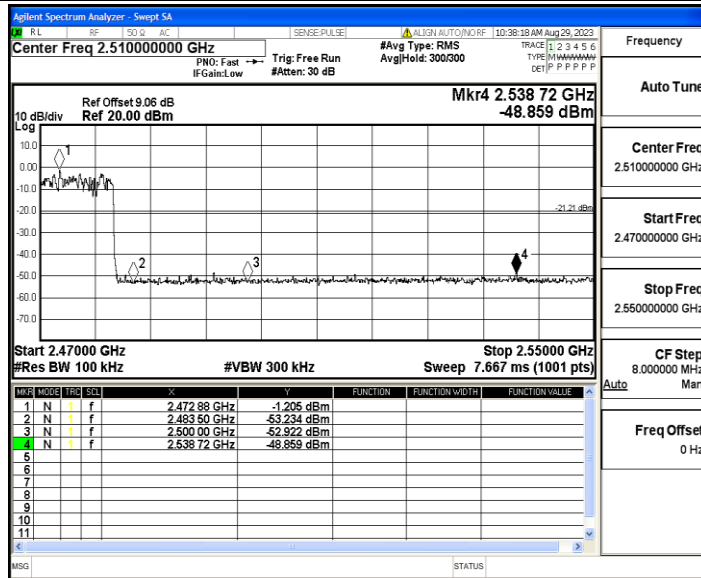
2DH5_Ant1_High_2480



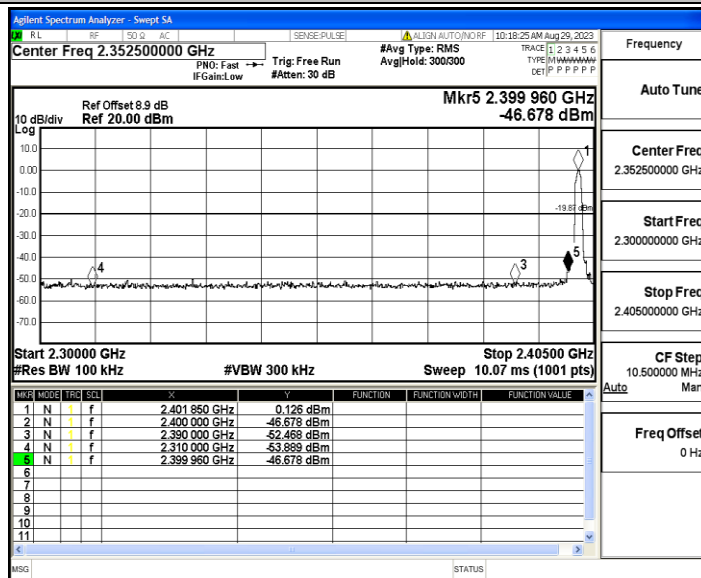
2DH5_Ant1_Low_Hop_2402



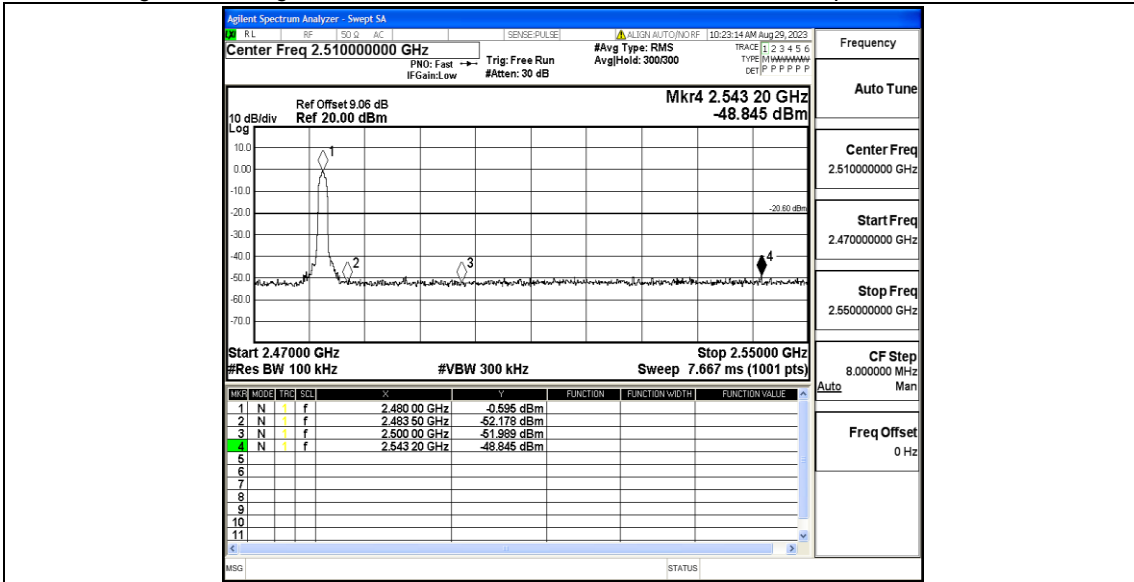
2DH5_Ant1_High_Hop_2480



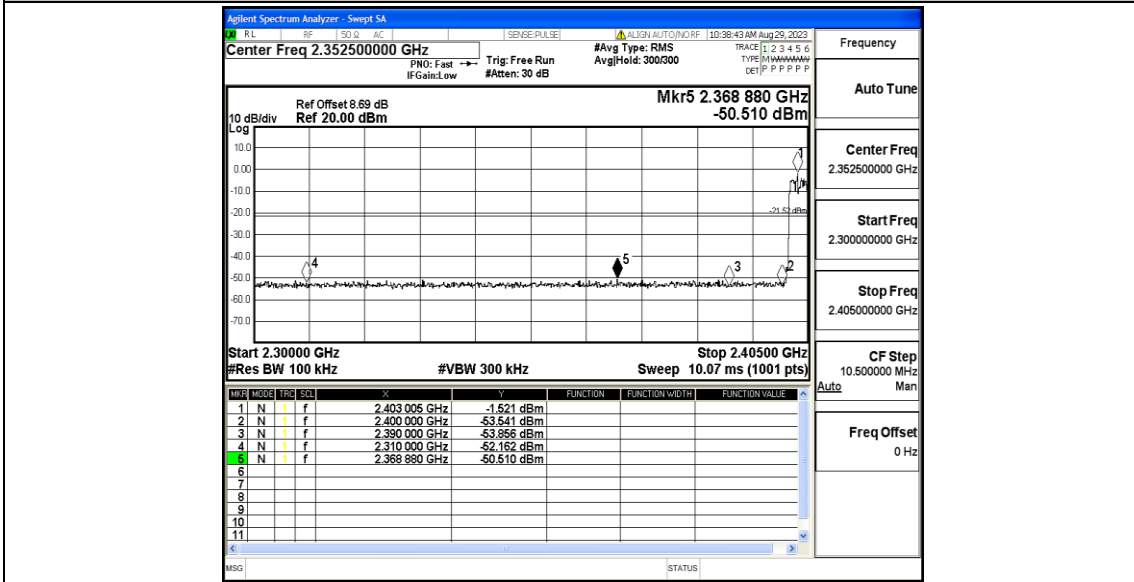
3DH5_Ant1_Low_2402



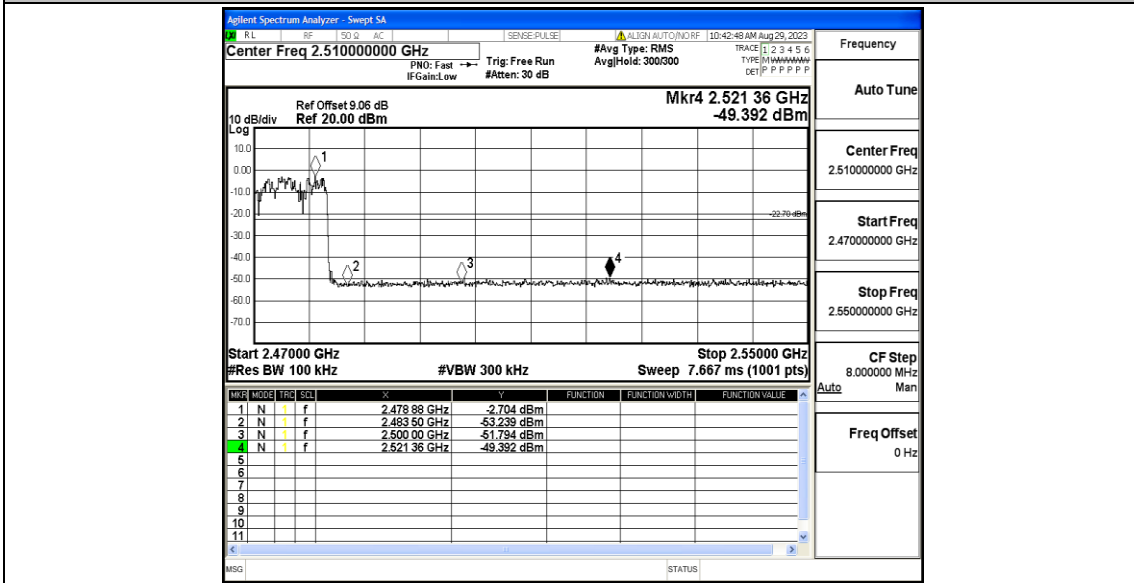
3DH5_Ant1_High_2480



3DH5_Ant1_Low_Hop_2402



3DH5_Ant1_High_Hop_2480

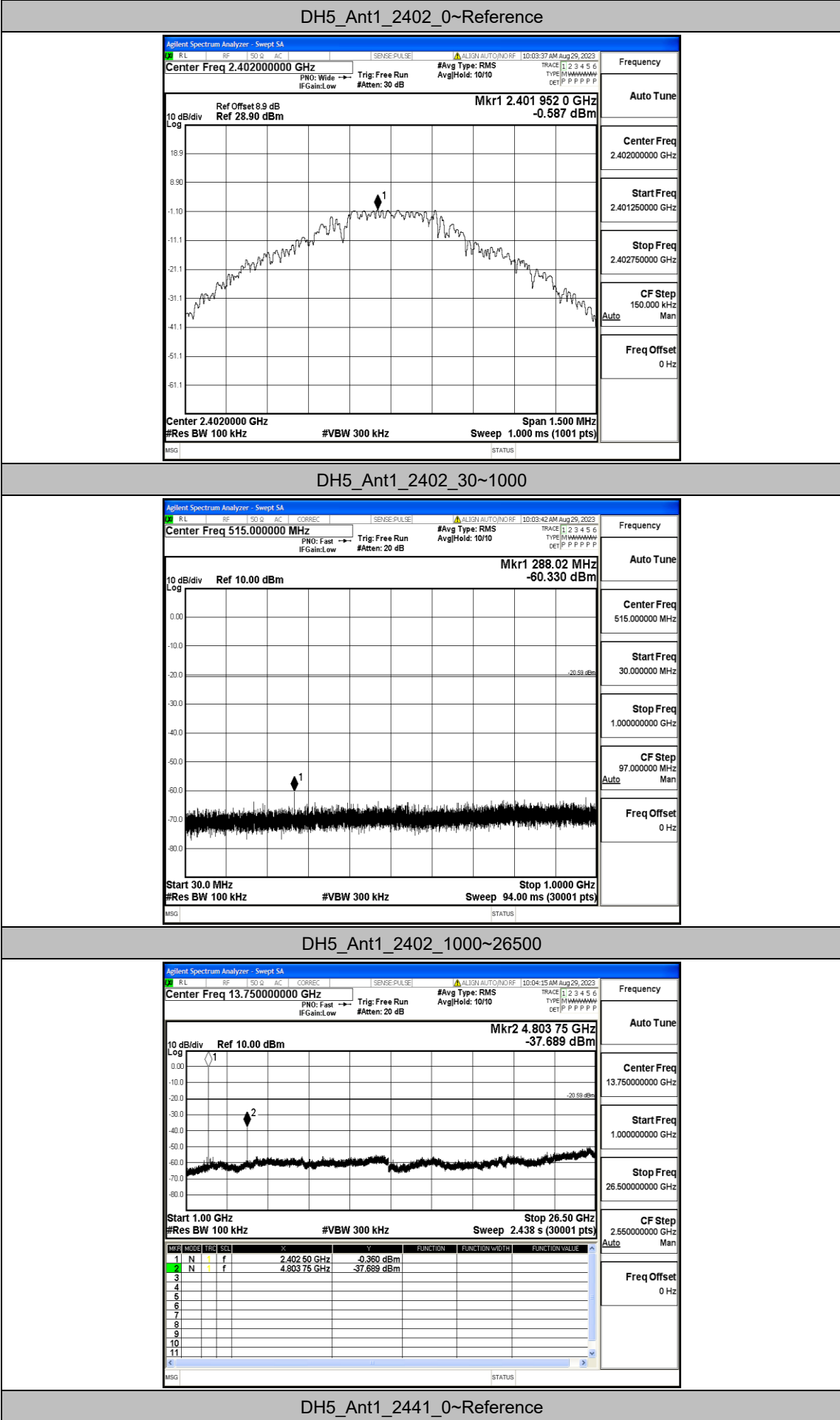


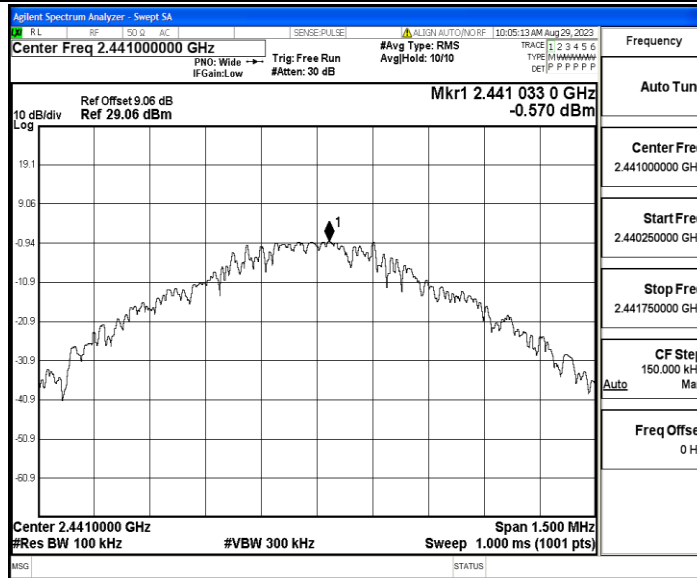
Appendix H: Conducted Spurious Emission

Test Result

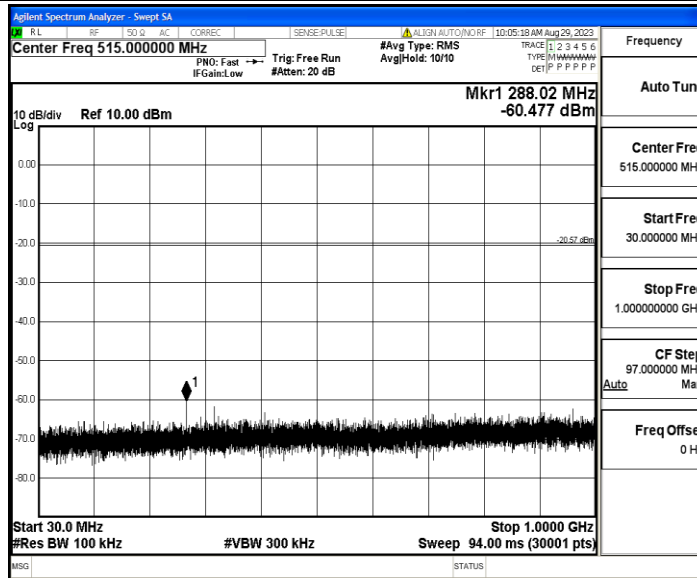
TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	Reference	-0.59	-0.59	---	PASS
			30~1000	-0.59	-60.33	≤-20.59	PASS
			1000~26500	-0.59	-37.69	≤-20.59	PASS
		2441	Reference	-0.57	-0.57	---	PASS
			30~1000	-0.57	-60.48	≤-20.57	PASS
			1000~26500	-0.57	-37.34	≤-20.57	PASS
		2480	Reference	-1.37	-1.37	---	PASS
			30~1000	-1.37	-60.62	≤-21.37	PASS
			1000~26500	-1.37	-39.49	≤-21.37	PASS
2DH5	Ant1	2402	Reference	-2.65	-2.65	---	PASS
			30~1000	-2.65	-61.01	≤-22.65	PASS
			1000~26500	-2.65	-38.49	≤-22.65	PASS
		2441	Reference	-3.11	-3.11	---	PASS
			30~1000	-3.11	-59.12	≤-23.11	PASS
			1000~26500	-3.11	-38.83	≤-23.11	PASS
		2480	Reference	-2.32	-2.32	---	PASS
			30~1000	-2.32	-60.21	≤-22.32	PASS
			1000~26500	-2.32	-39.99	≤-22.32	PASS
3DH5	Ant1	2402	Reference	-3.14	-3.14	---	PASS
			30~1000	-3.14	-60.16	≤-23.14	PASS
			1000~26500	-3.14	-39.13	≤-23.14	PASS
		2441	Reference	-1.98	-1.98	---	PASS
			30~1000	-1.98	-60	≤-21.98	PASS
			1000~26500	-1.98	-39.22	≤-21.98	PASS
		2480	Reference	-2.77	-2.77	---	PASS
			30~1000	-2.77	-59.83	≤-22.77	PASS
			1000~26500	-2.77	-41.94	≤-22.77	PASS

Test Graphs

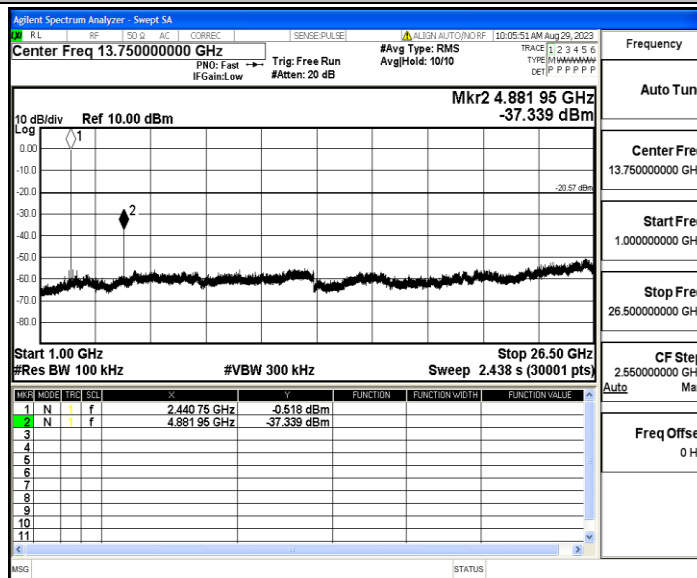




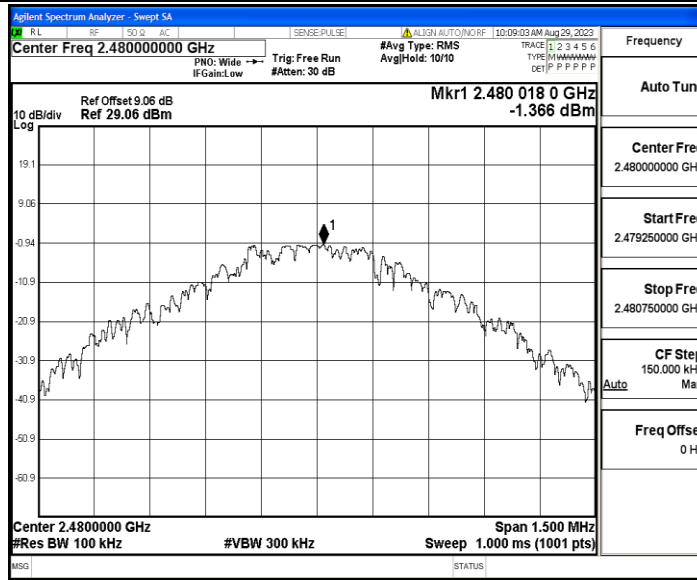
DH5_Ant1_2441_30~1000



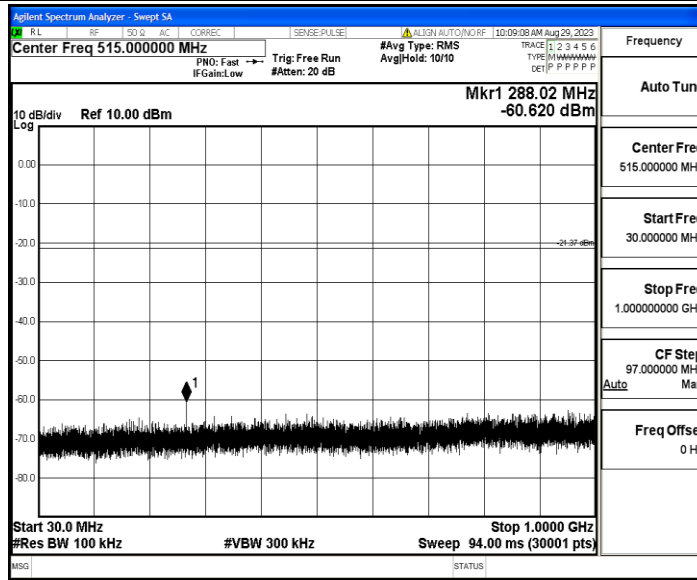
DH5_Ant1_2441_1000~26500



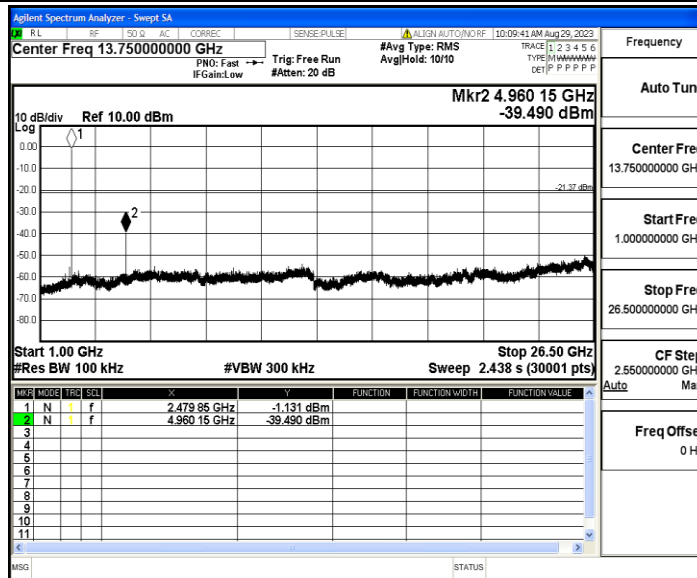
DH5_Ant1_2480_0~Reference



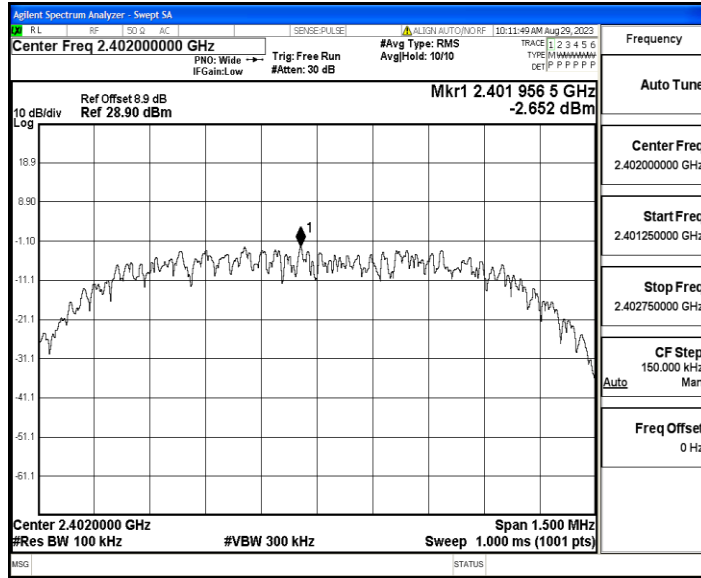
DH5_Ant1_2480_30~1000



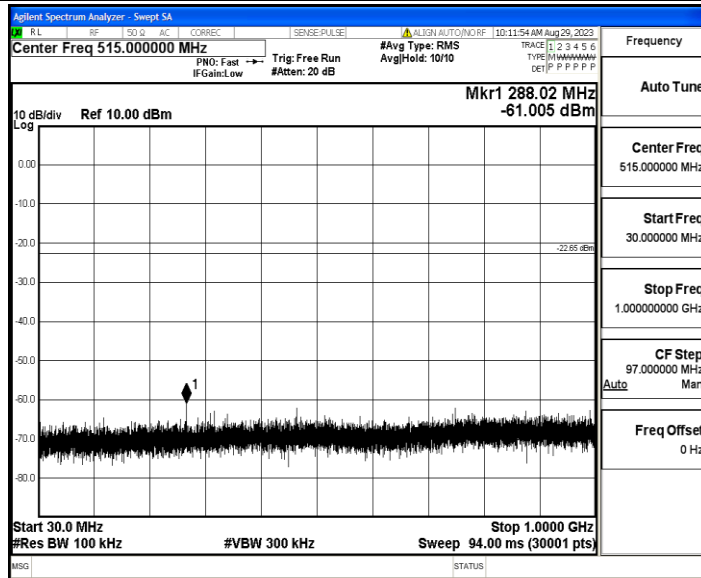
DH5_Ant1_2480_1000~26500



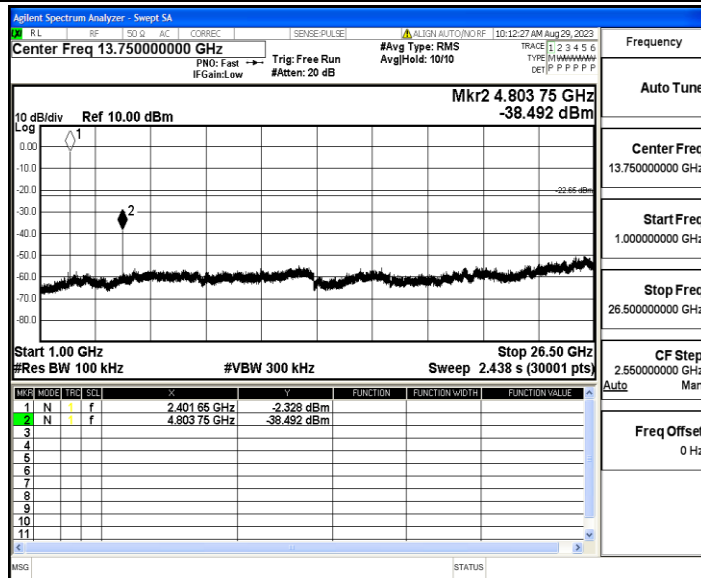
2DH5_Ant1_2402_0~Reference



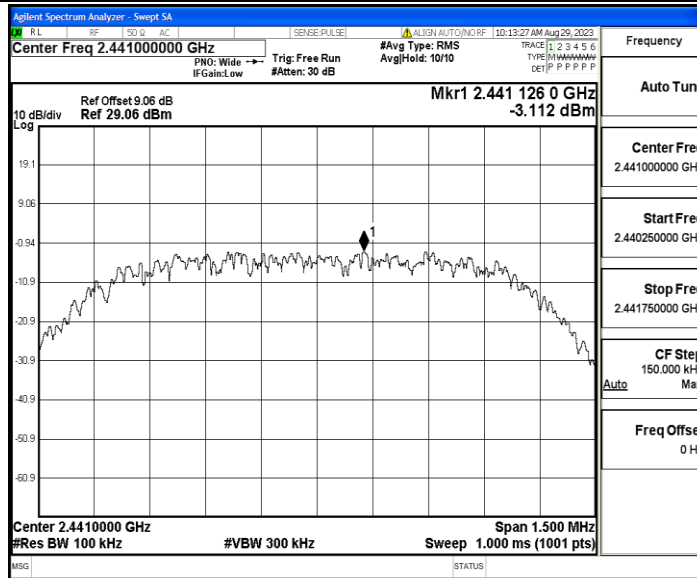
2DH5_Ant1_2402_30~1000



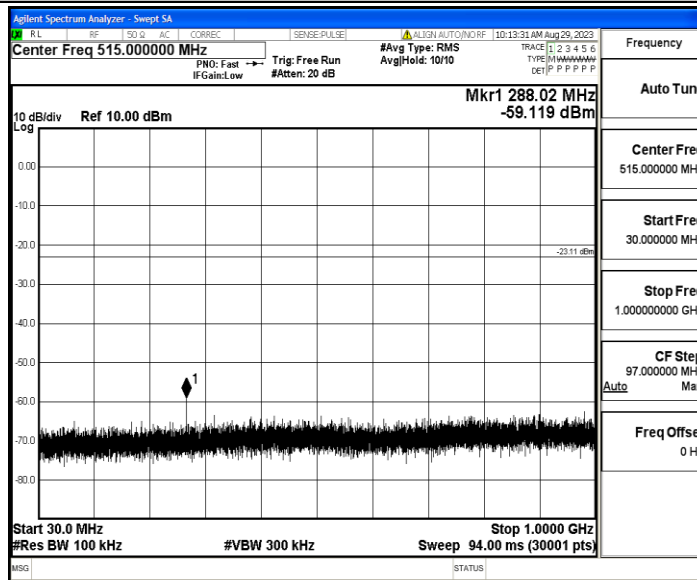
2DH5_Ant1_2402_1000~26500



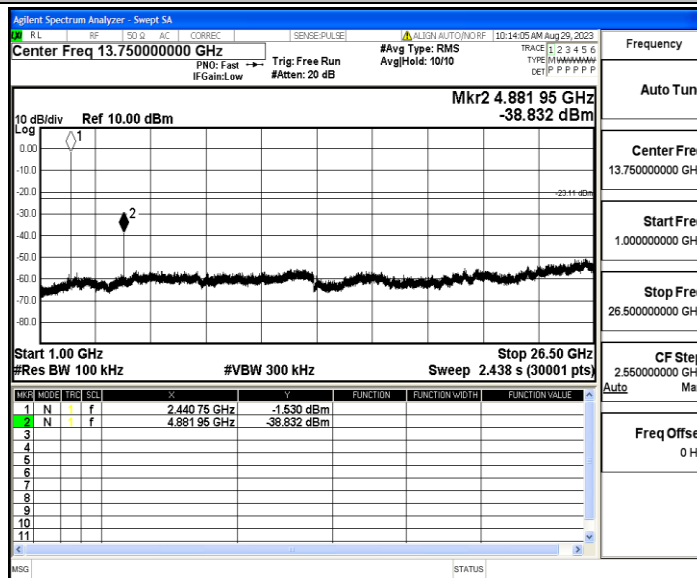
2DH5_Ant1_2441_0~Reference



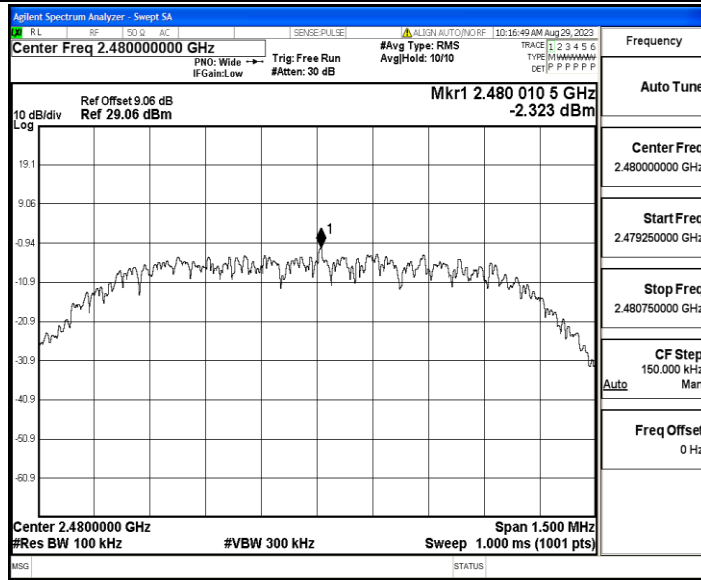
2DH5_Ant1_2441_30~1000



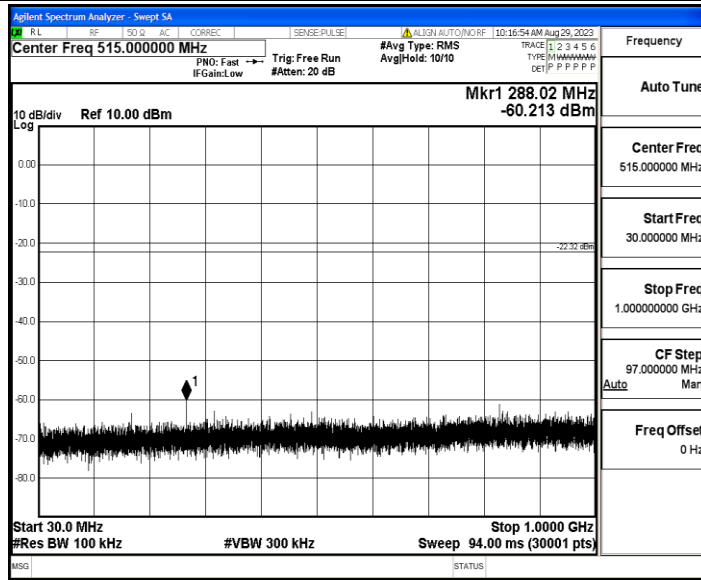
2DH5_Ant1_2441_1000~26500



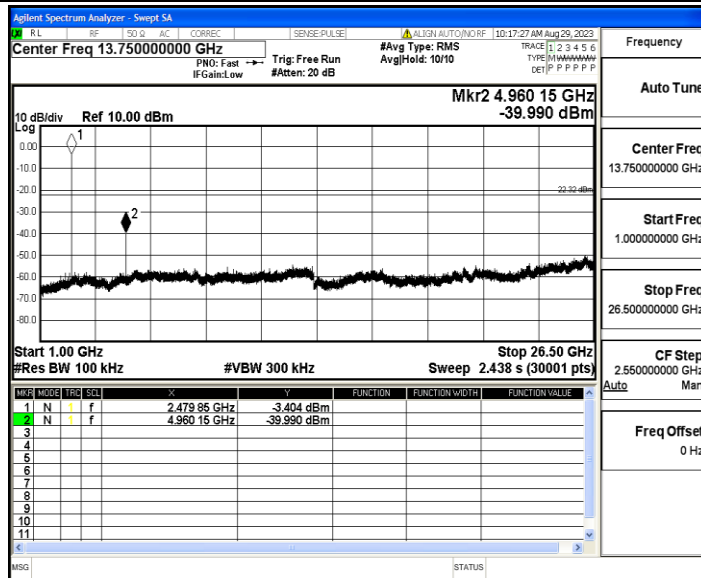
2DH5_Ant1_2480_0~Reference



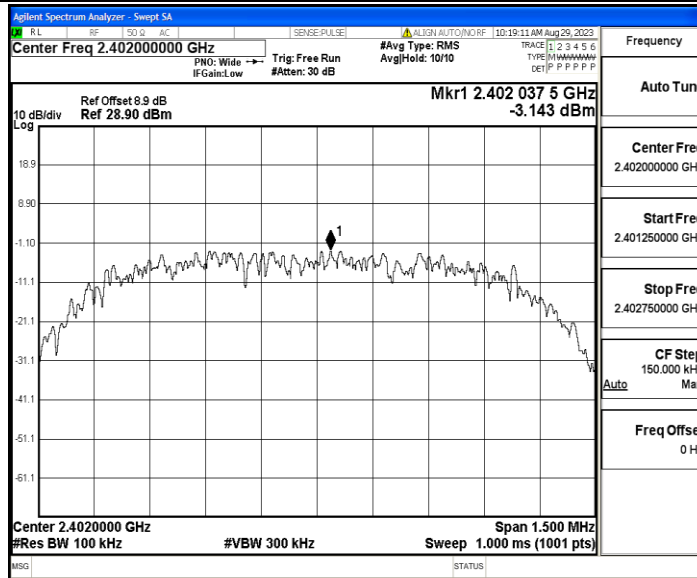
2DH5_Ant1_2480_30~1000



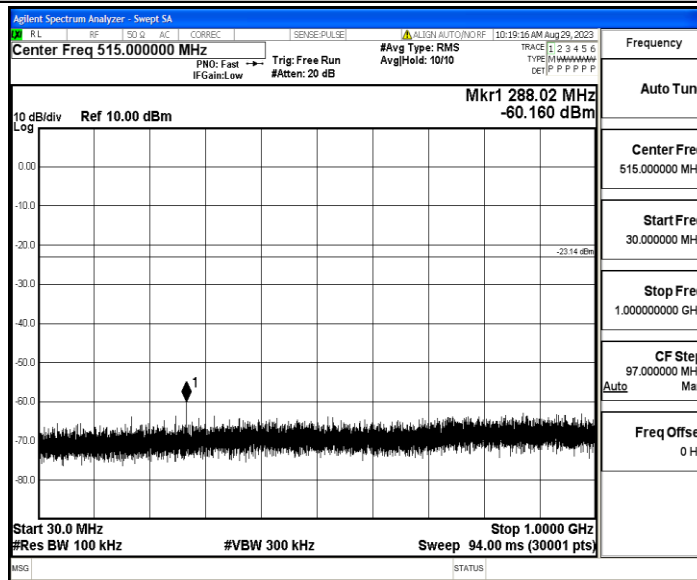
2DH5_Ant1_2480_1000~26500



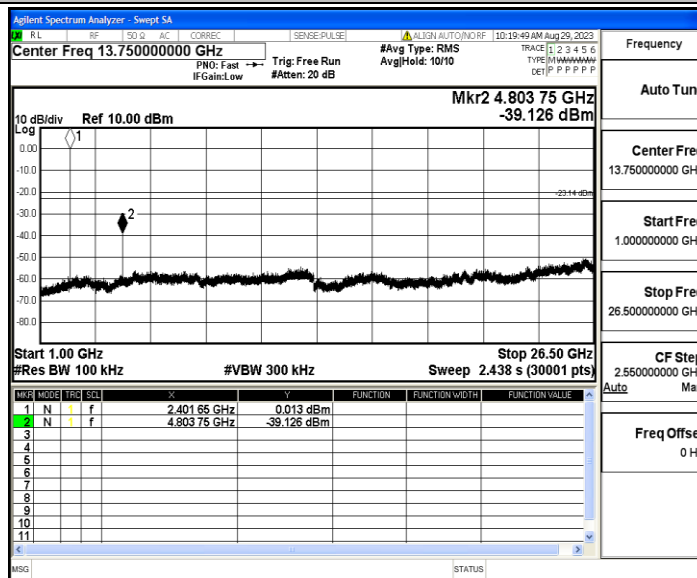
3DH5_Ant1_2402_0~Reference



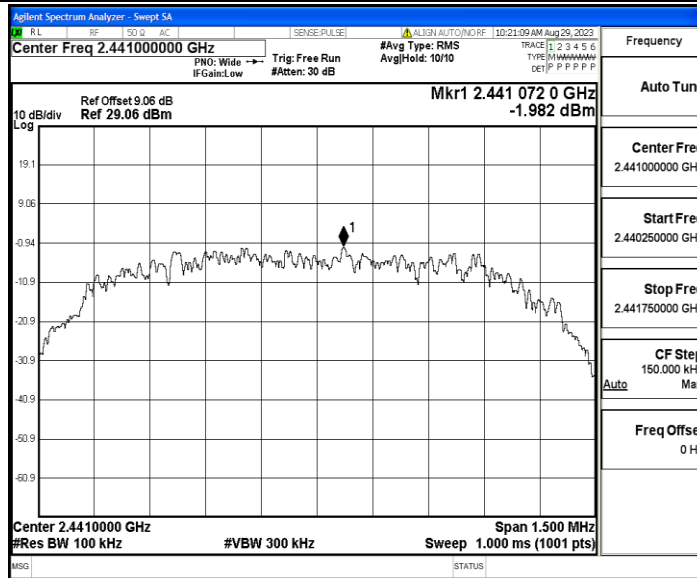
3DH5_Ant1_2402_30~1000



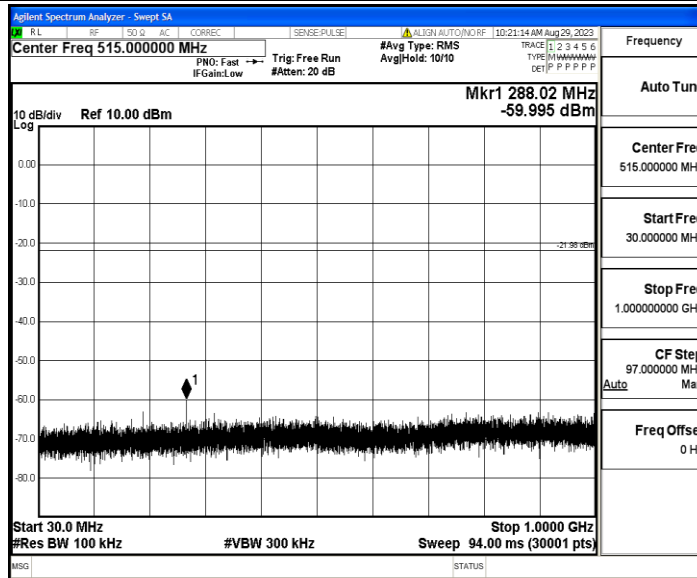
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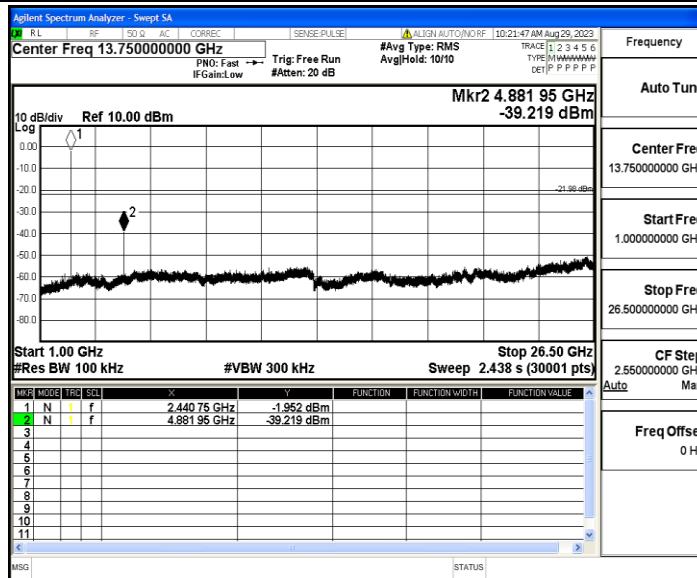
3DH5_Ant1_2441_0~Reference



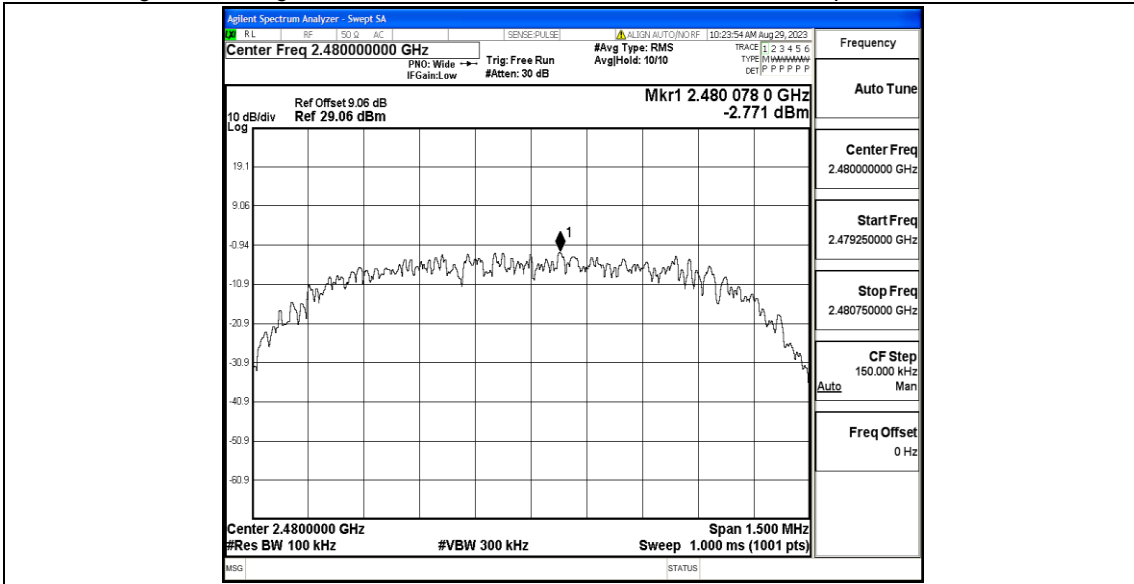
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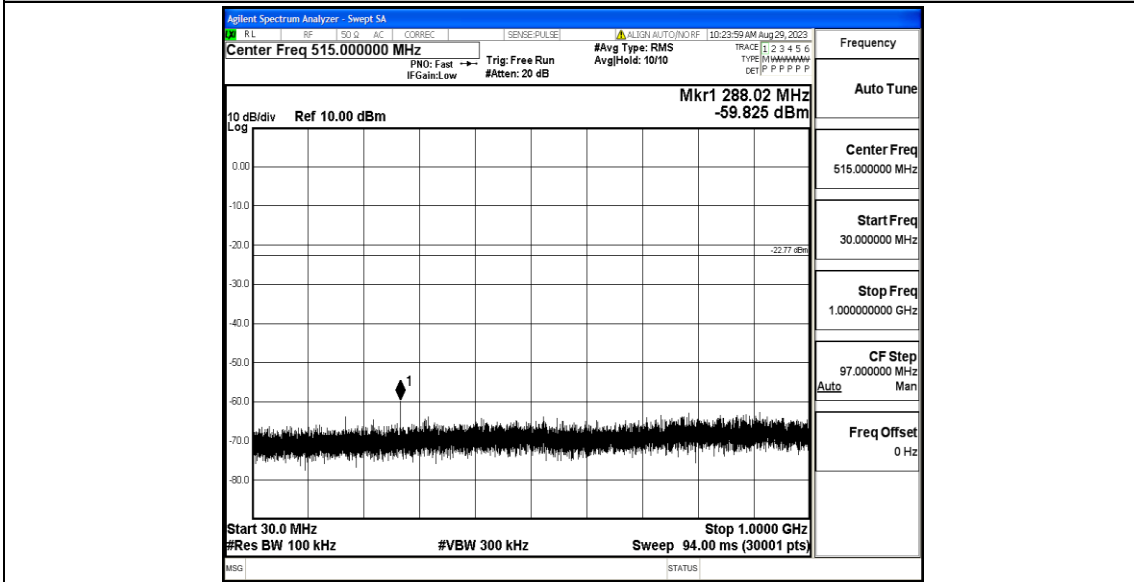
3DH5_Ant1_2441_1000~26500



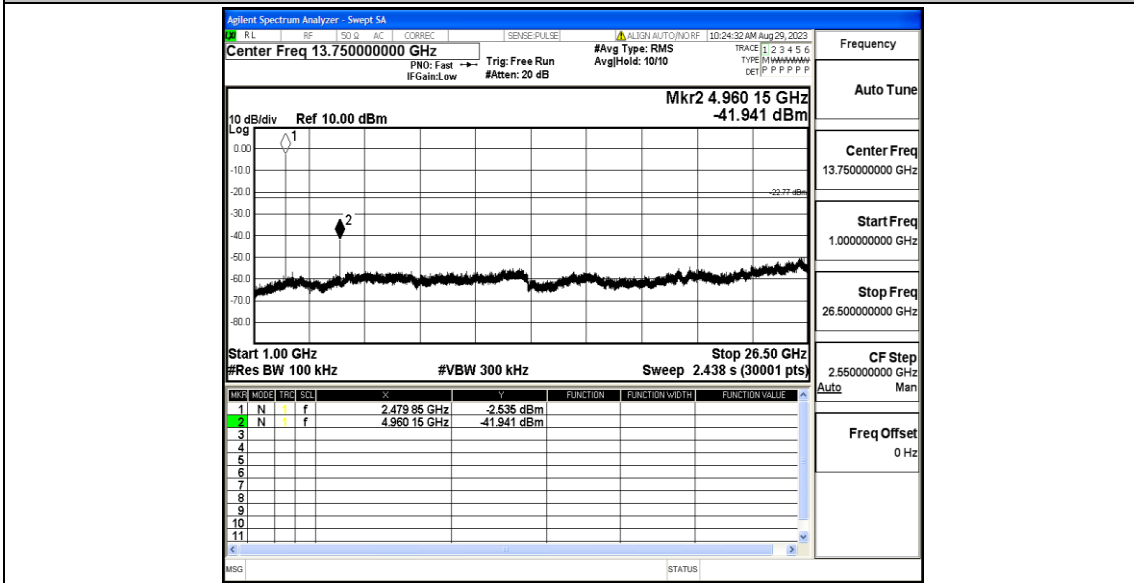
3DH5_Ant1_2480_0~Reference



3DH5_Ant1_2480_30~1000



3DH5_Ant1_2480_1000~26500

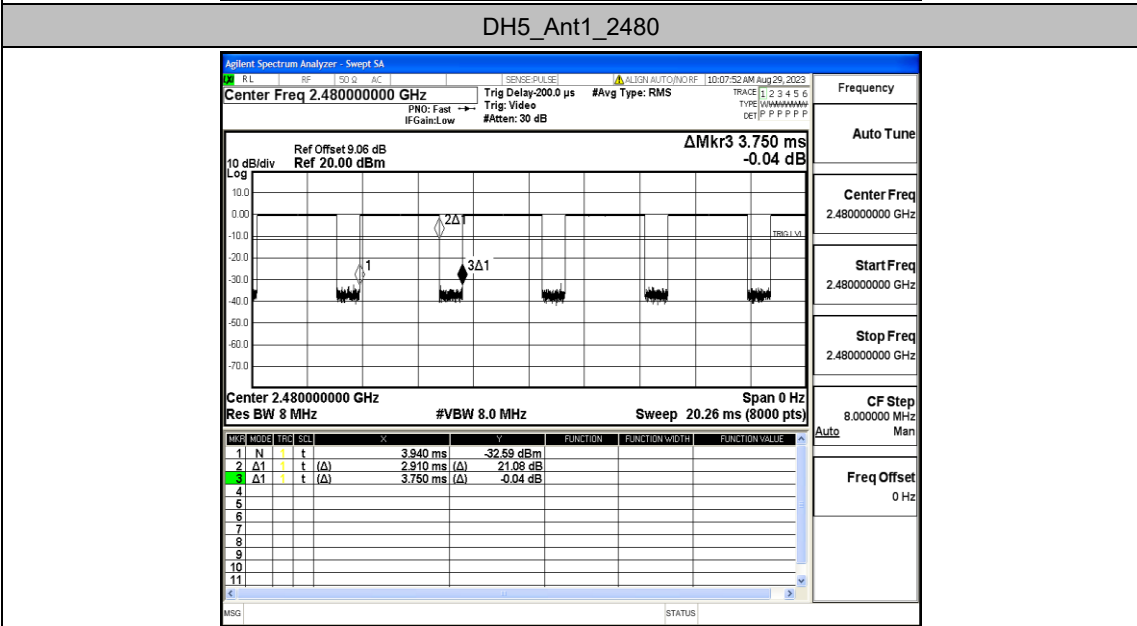
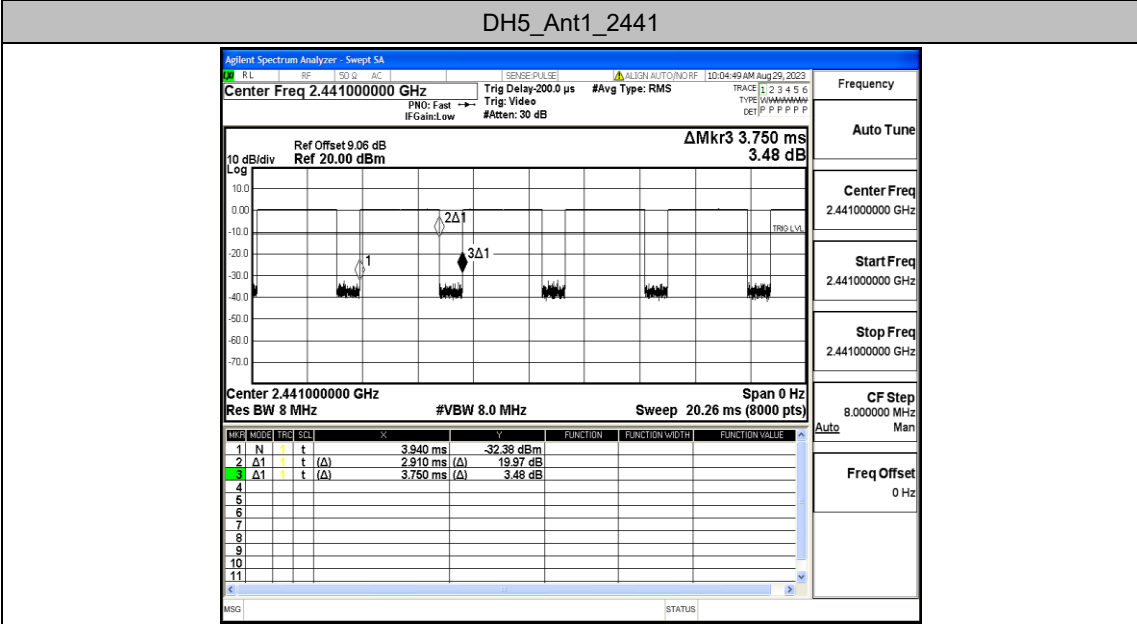
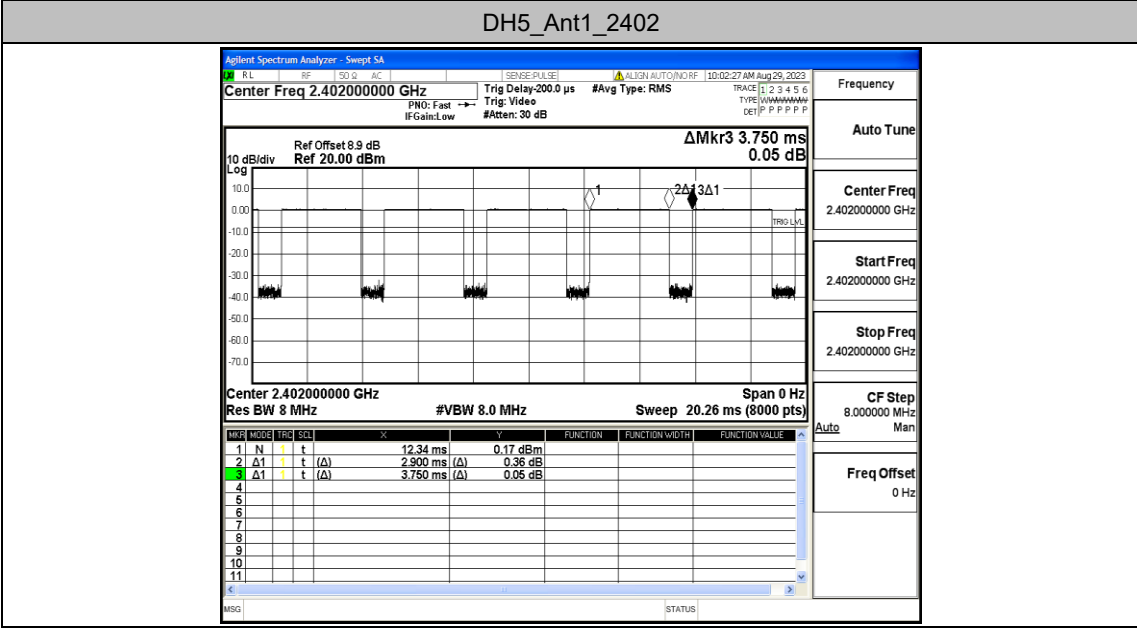


Appendix I: Duty Cycle

Test Result

TestMode	Antenna	Channel	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	1/T[kHz]
DH5	Ant1	2402	2.90	3.75	77.33	0.34
		2441	2.91	3.75	77.60	0.34
		2480	2.91	3.75	77.60	0.34
2DH5	Ant1	2402	2.91	3.75	77.60	0.34
		2441	2.91	3.75	77.60	0.34
		2480	2.91	3.75	77.60	0.34
3DH5	Ant1	2402	2.91	3.75	77.60	0.34
		2441	2.91	3.75	77.60	0.34
		2480	2.91	3.75	77.60	0.34

Test Graphs



2DH5_Ant1_2402