

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

Product Name: 4K Set Top Box

Trade Mark: OptiSigns

Test Model: ARD3

FCC ID: 2AOVU-ARD3

Environmental Conditions

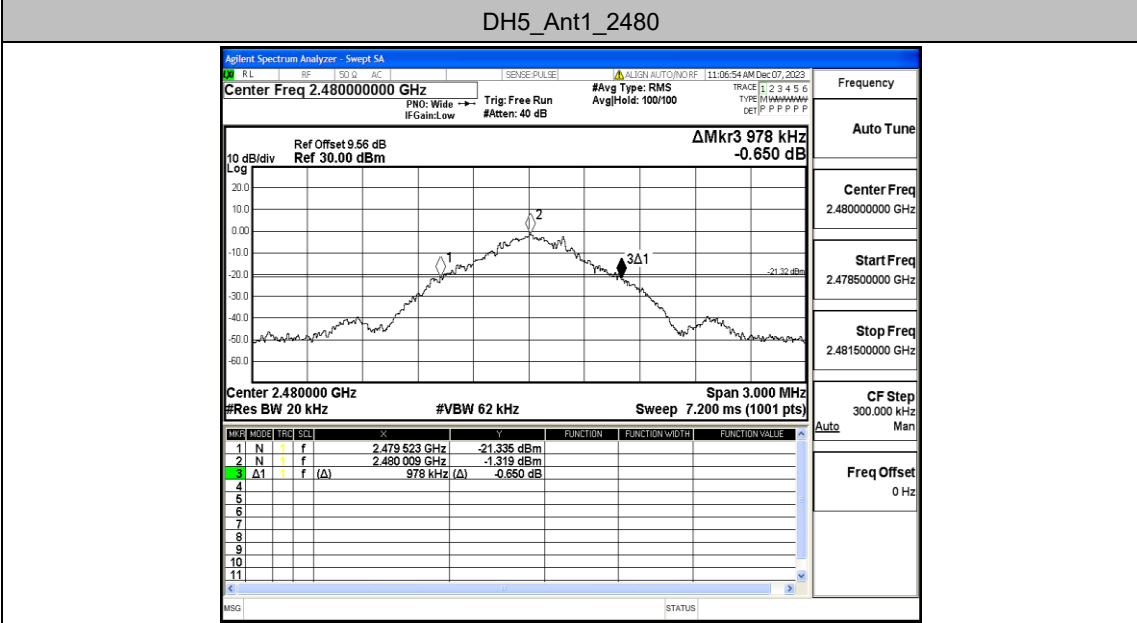
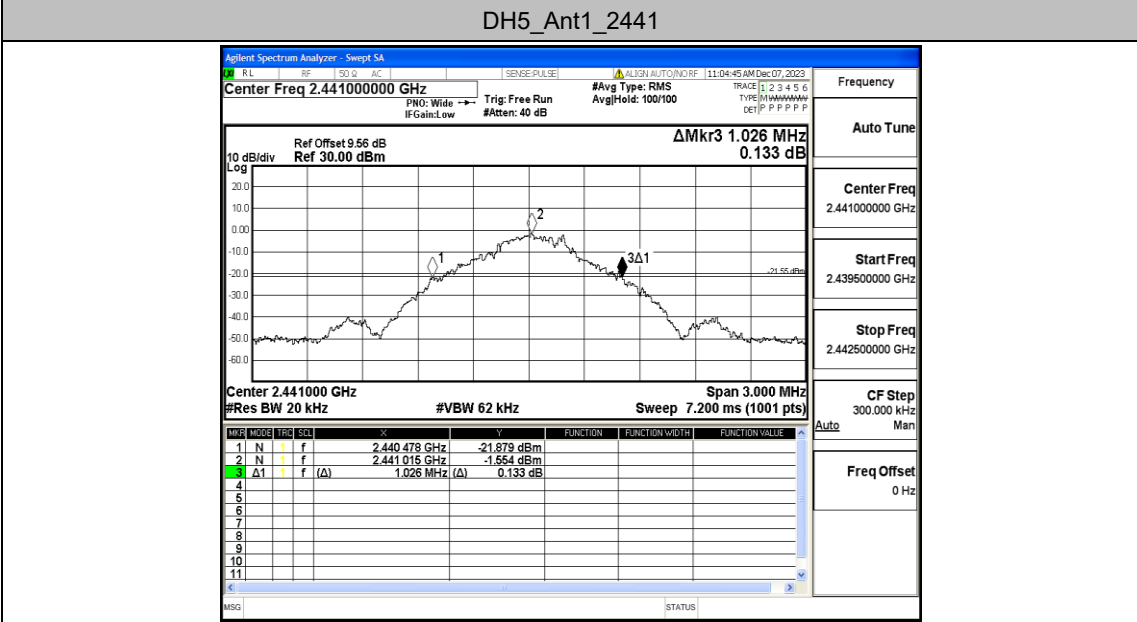
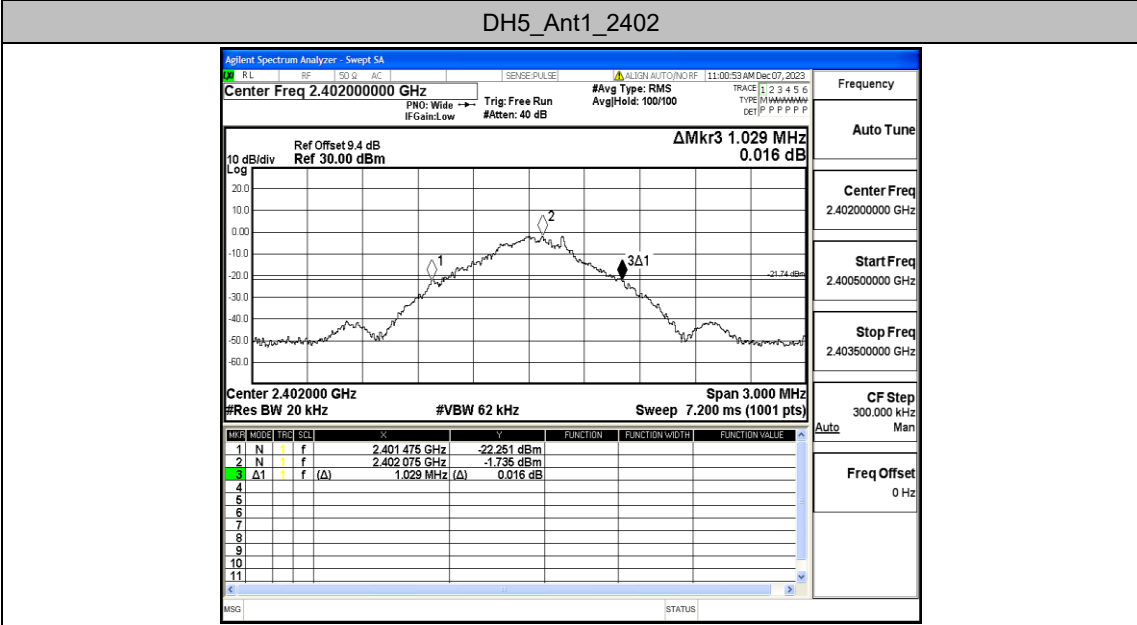
Temperature:	25.5°C
Relative Humidity:	55%
ATM Pressure:	100.0 kPa
Test Engineer:	Anna Hu
Supervised by:	Hugo Chen
NOTE	N/A

Appendix A: 20dB Emission Bandwidth

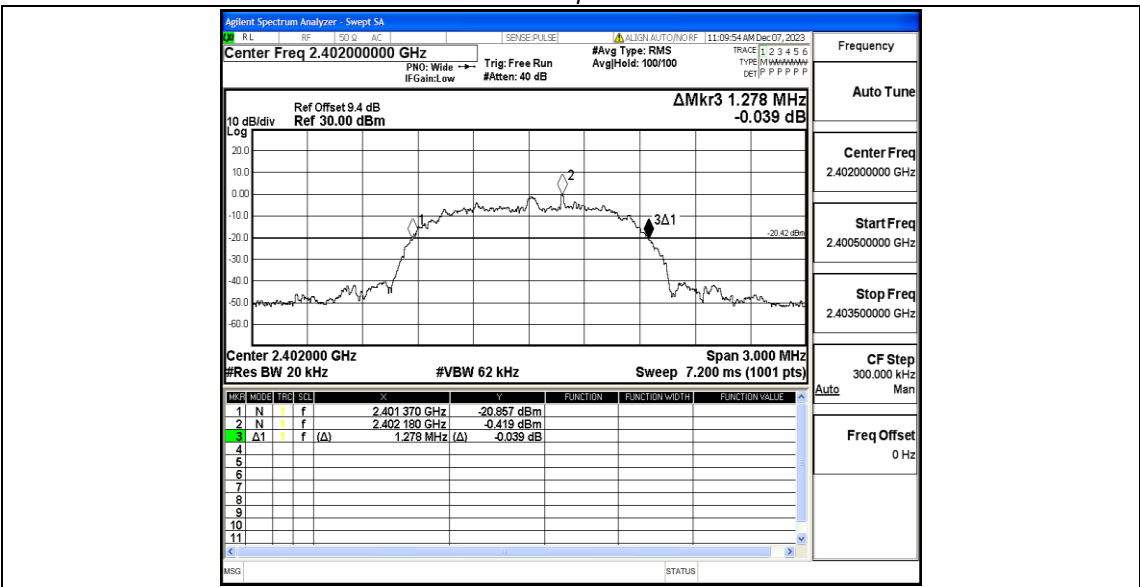
Test Result

TestMode	Antenna	Channel	20db EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	1.029	2401.475	2402.504	---	---
		2441	1.026	2440.478	2441.504	---	---
		2480	0.978	2479.523	2480.501	---	---
2DH5	Ant1	2402	1.278	2401.370	2402.648	---	---
		2441	1.305	2440.358	2441.663	---	---
		2480	1.272	2479.367	2480.639	---	---
3DH5	Ant1	2402	1.269	2401.382	2402.651	---	---
		2441	1.287	2440.361	2441.648	---	---
		2480	1.290	2479.376	2480.666	---	---

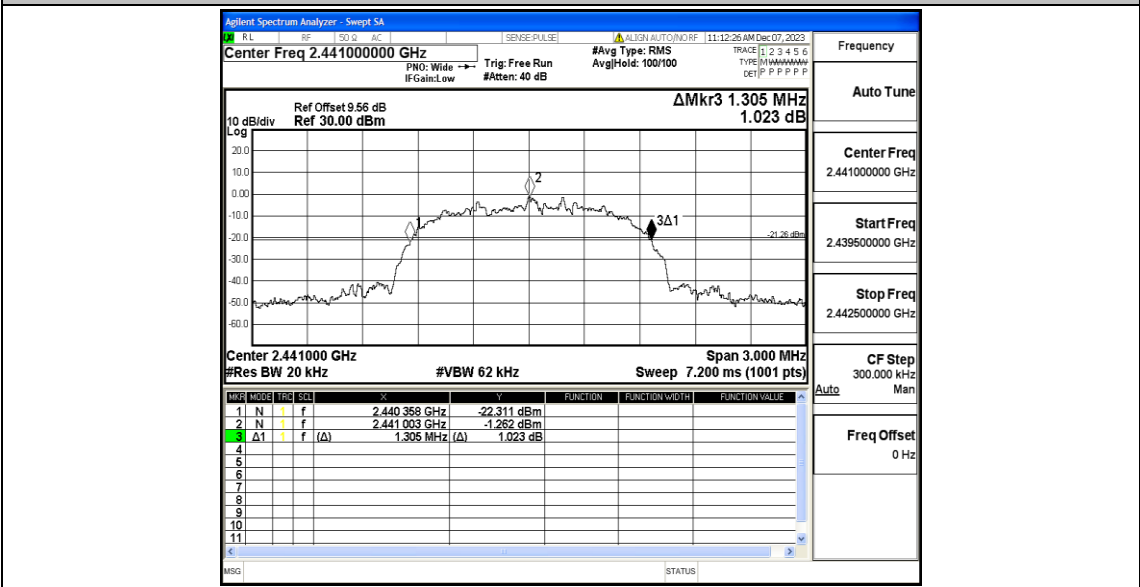
Test Graphs



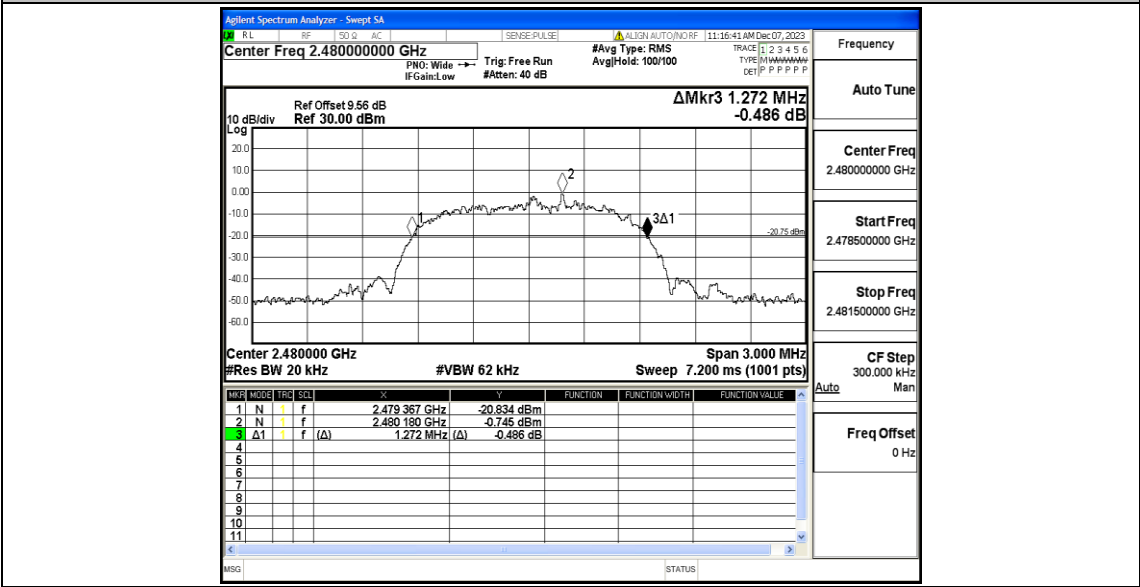
2DH5_Ant1_2402



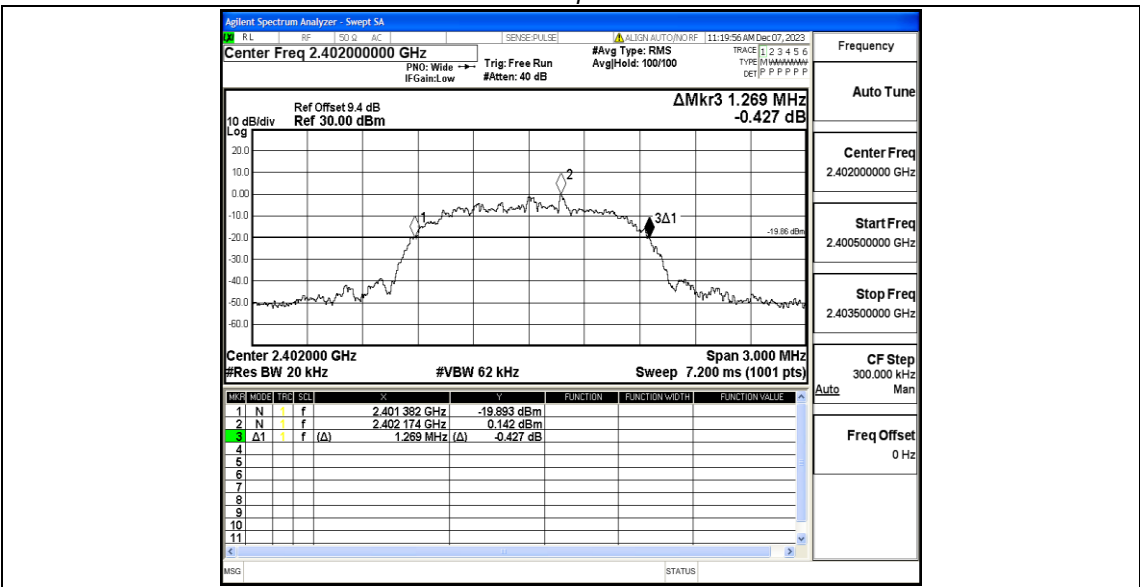
2DH5_Ant1_2441



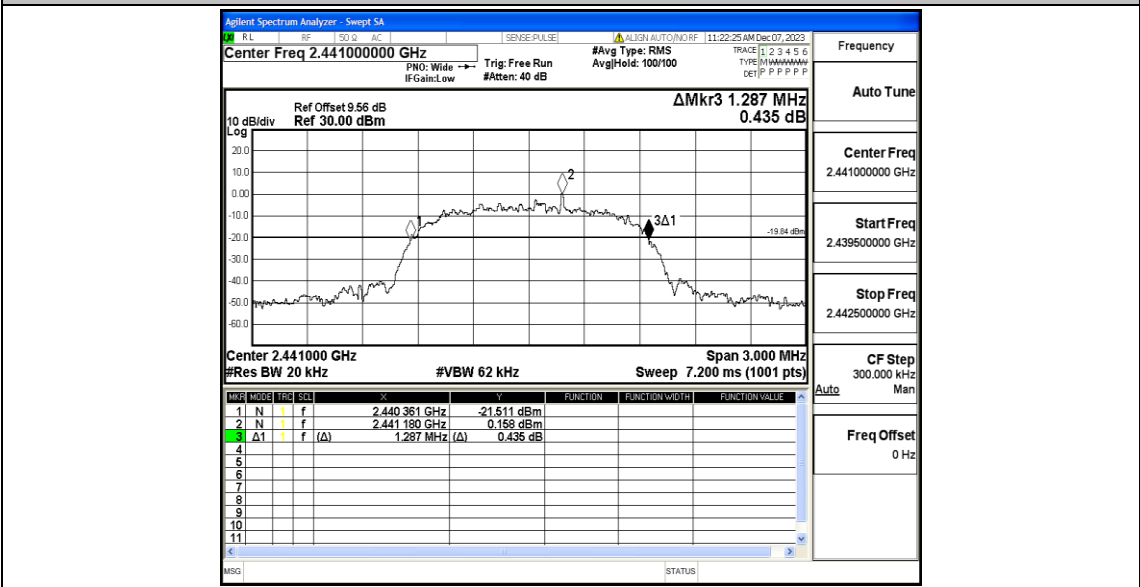
2DH5_Ant1_2480



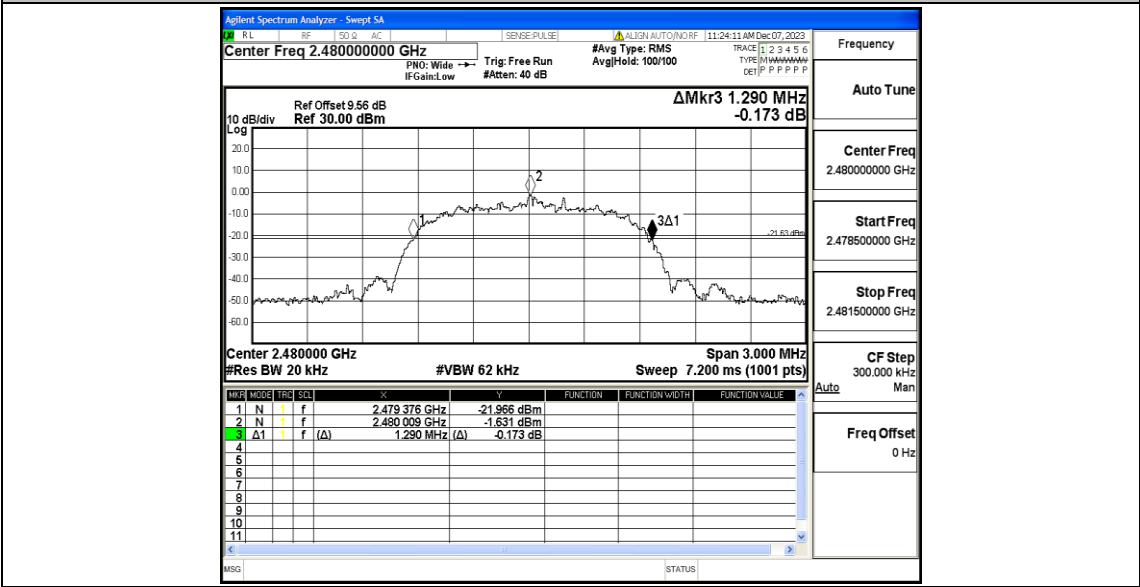
3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480

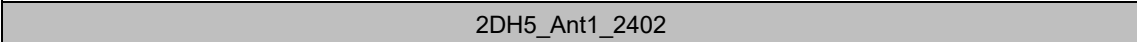
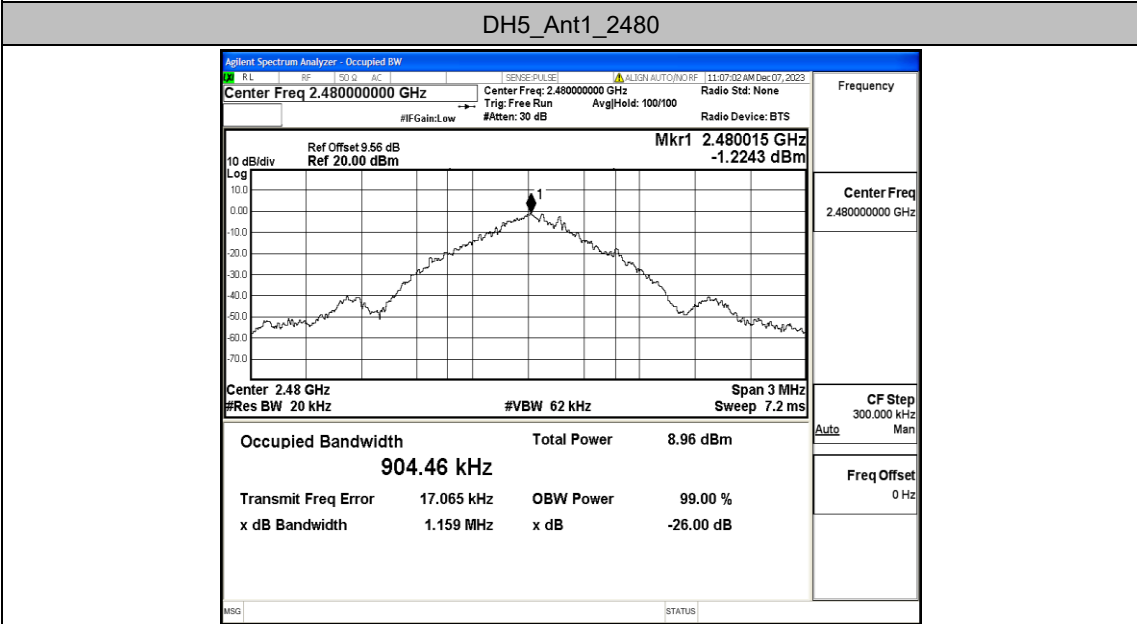
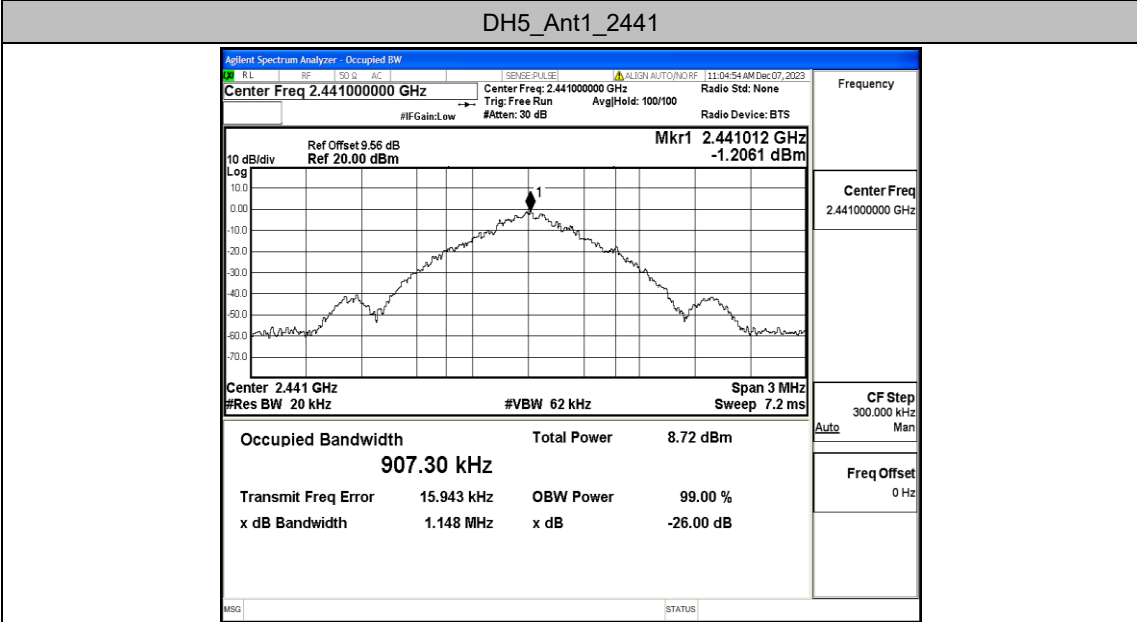
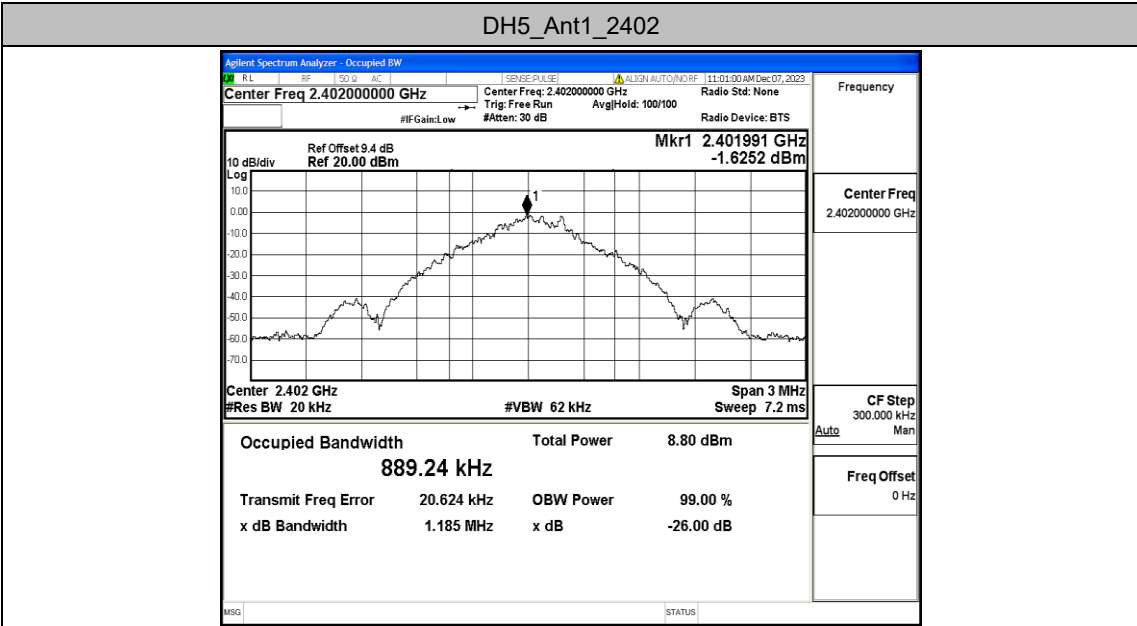


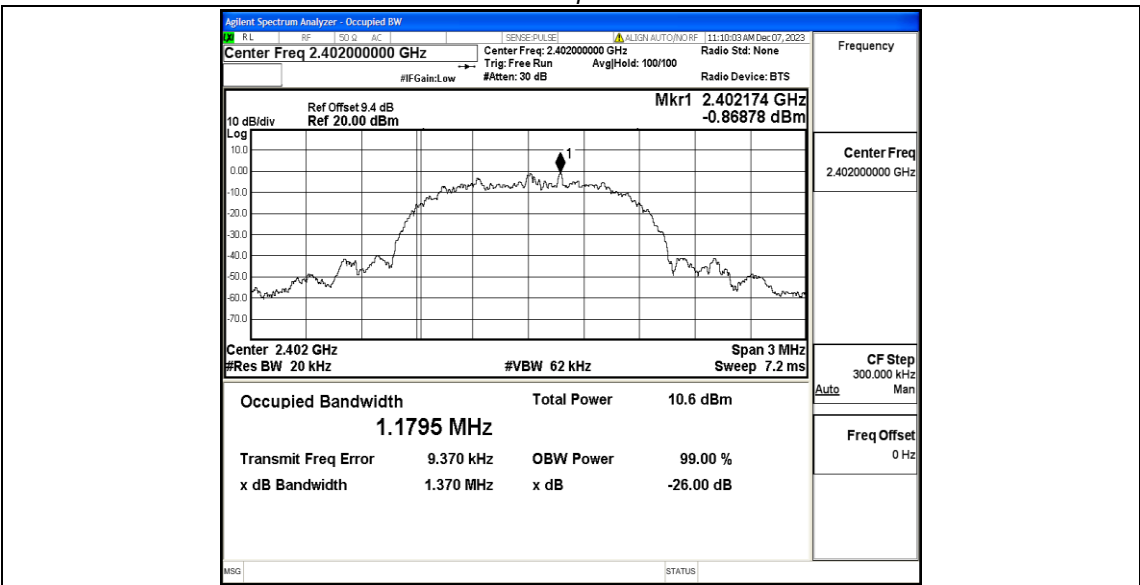
Appendix B: Occupied Channel Bandwidth

Test Result

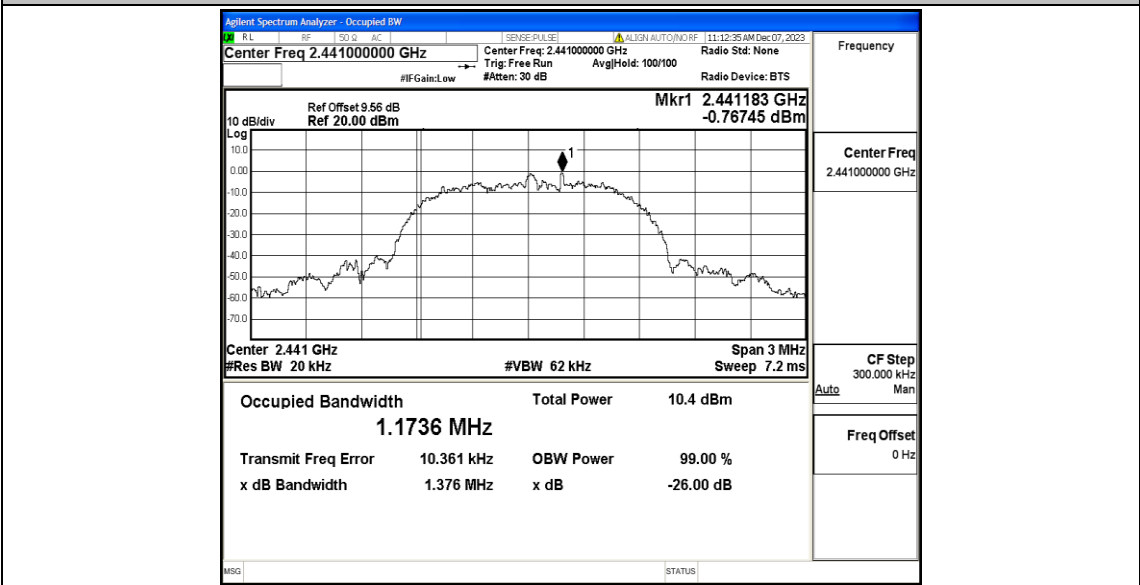
TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.88924	2401.5760	2402.4652	---	---
		2441	0.90730	2440.5623	2441.4696	---	---
		2480	0.90446	2479.5648	2480.4693	---	---
2DH5	Ant1	2402	1.1795	2401.4196	2402.5991	---	---
		2441	1.1736	2440.4236	2441.5972	---	---
		2480	1.1830	2479.4154	2480.5984	---	---
3DH5	Ant1	2402	1.1757	2401.4203	2402.5960	---	---
		2441	1.1722	2440.4268	2441.5990	---	---
		2480	1.1690	2479.4321	2480.6011	---	---

Test Graphs

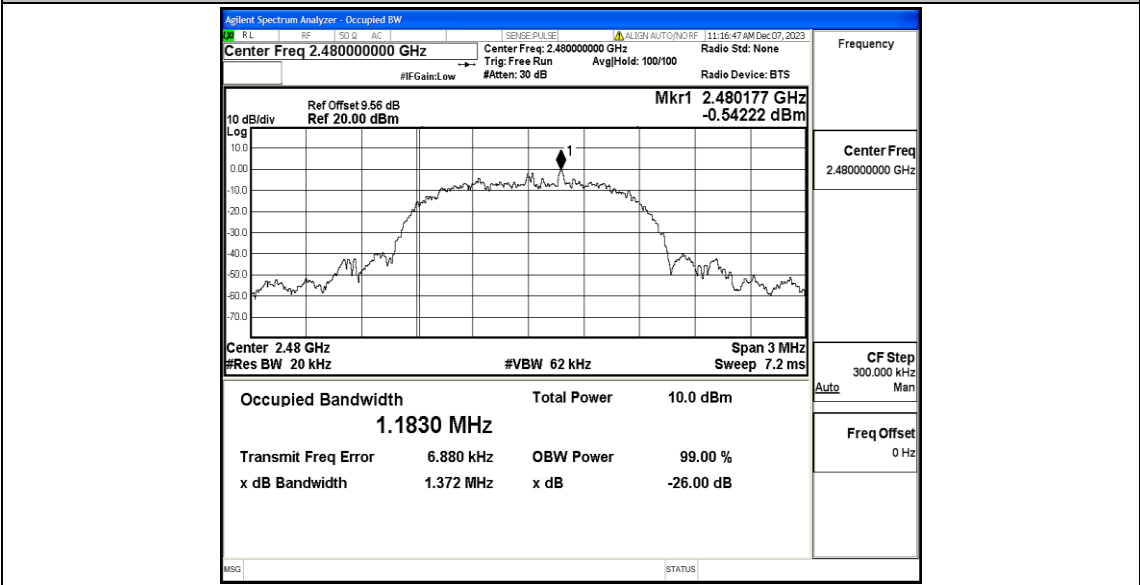




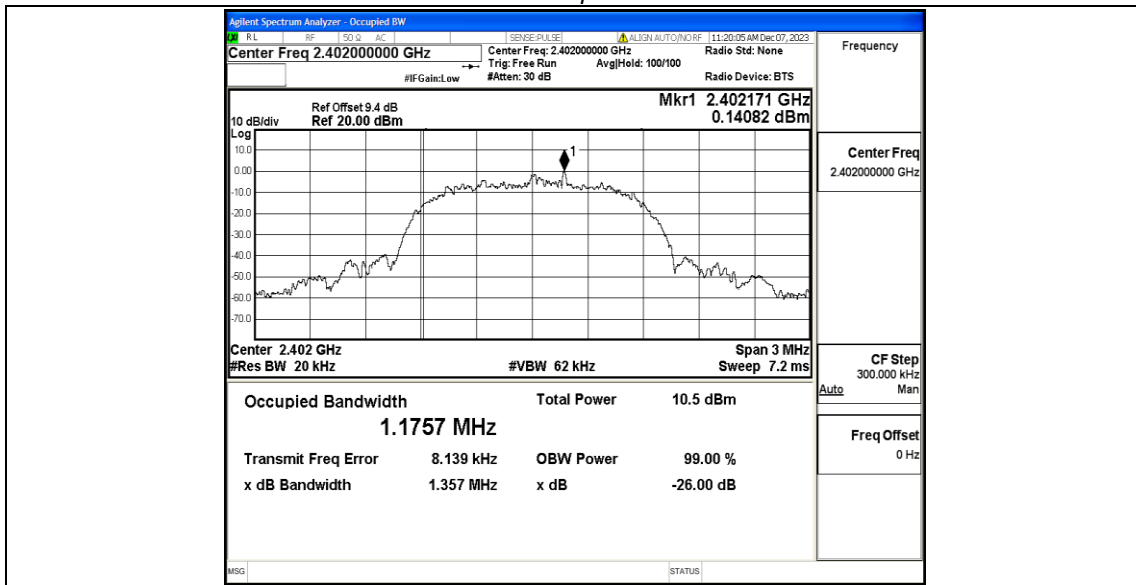
2DH5_Ant1_2441



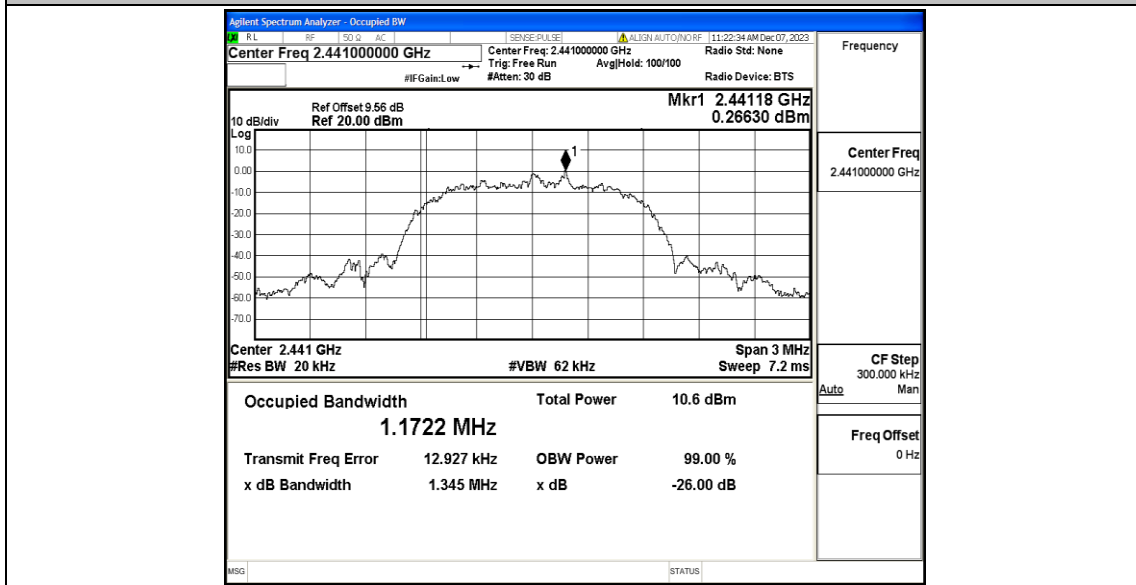
2DH5_Ant1_2480



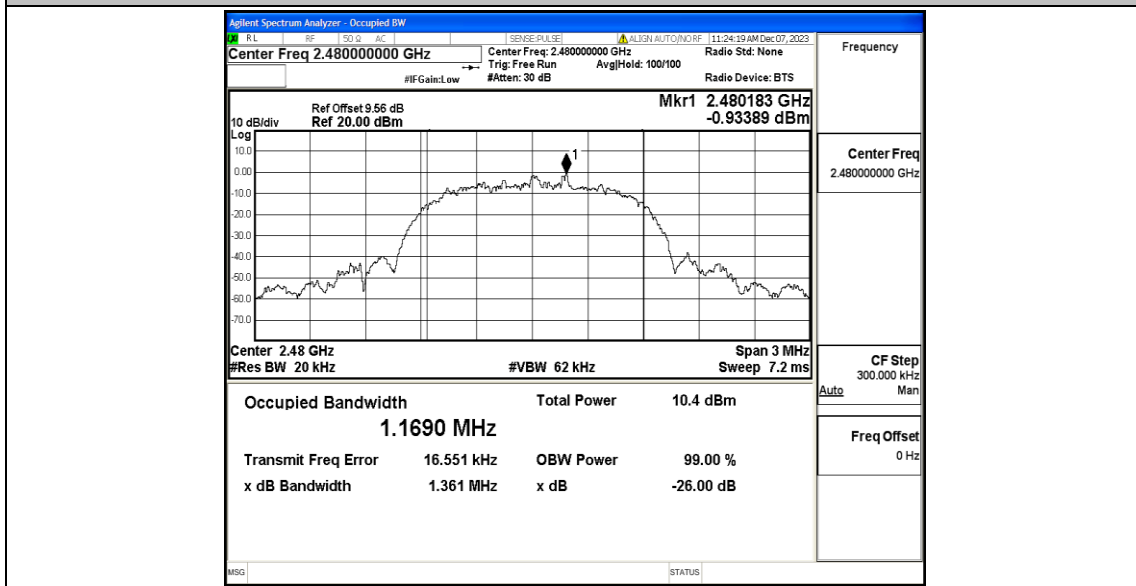
3DH5_Ant1_2402



3DH5_Ant1_2441



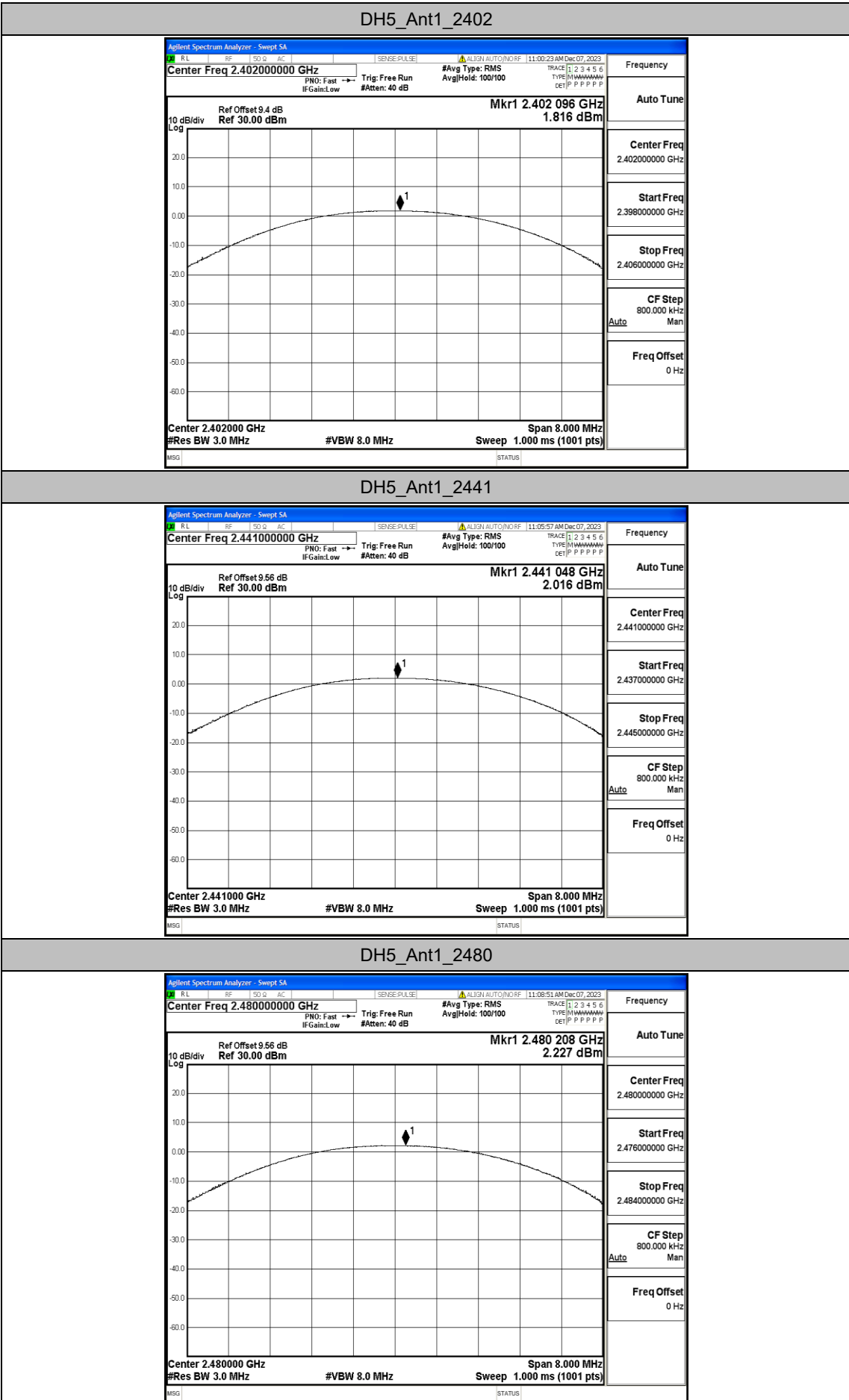
3DH5_Ant1_2480



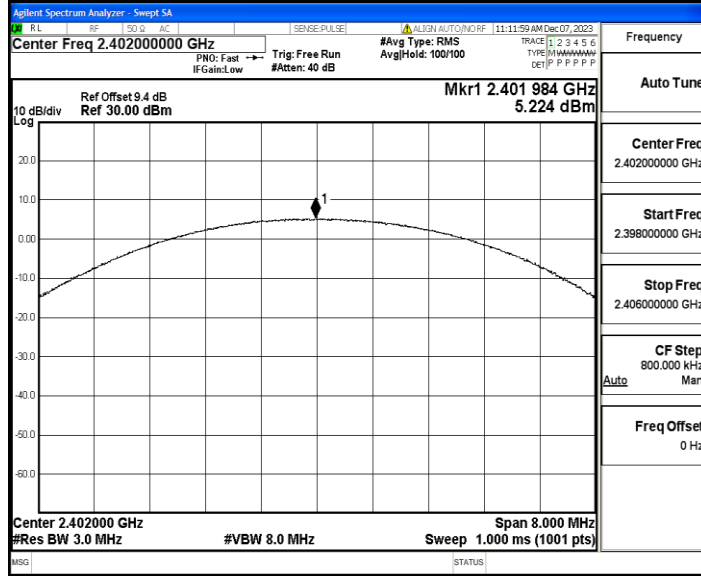
Appendix C: Maximum Peak conducted output power**Test Result**

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
DH5	Ant1	2402	1.82	≤30	PASS
		2441	2.02	≤20.97	PASS
		2480	2.23	≤20.97	PASS
2DH5	Ant1	2402	5.22	≤20.97	PASS
		2441	5.07	≤20.97	PASS
		2480	4.88	≤20.97	PASS
3DH5	Ant1	2402	5.62	≤20.97	PASS
		2441	5.48	≤20.97	PASS
		2480	5.39	≤20.97	PASS

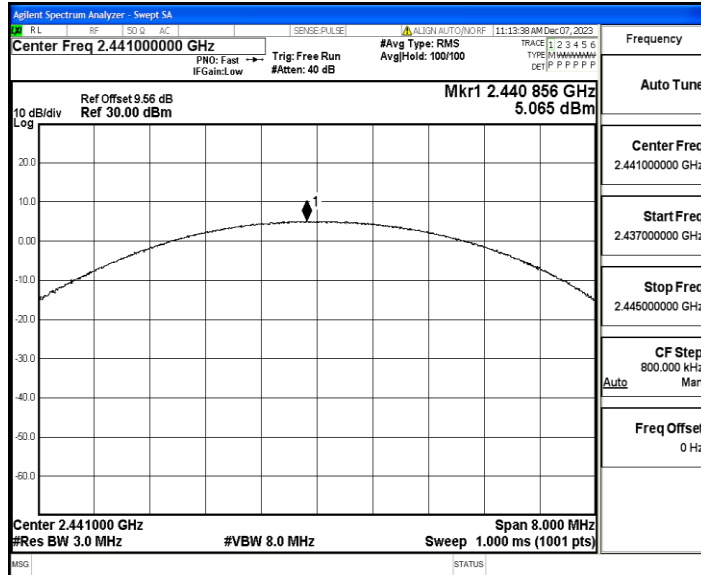
Test Graphs



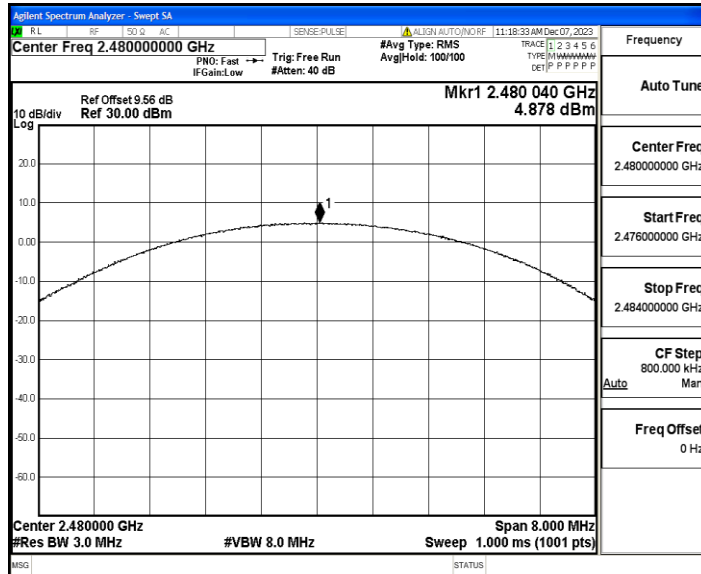
2DH5_Ant1_2402



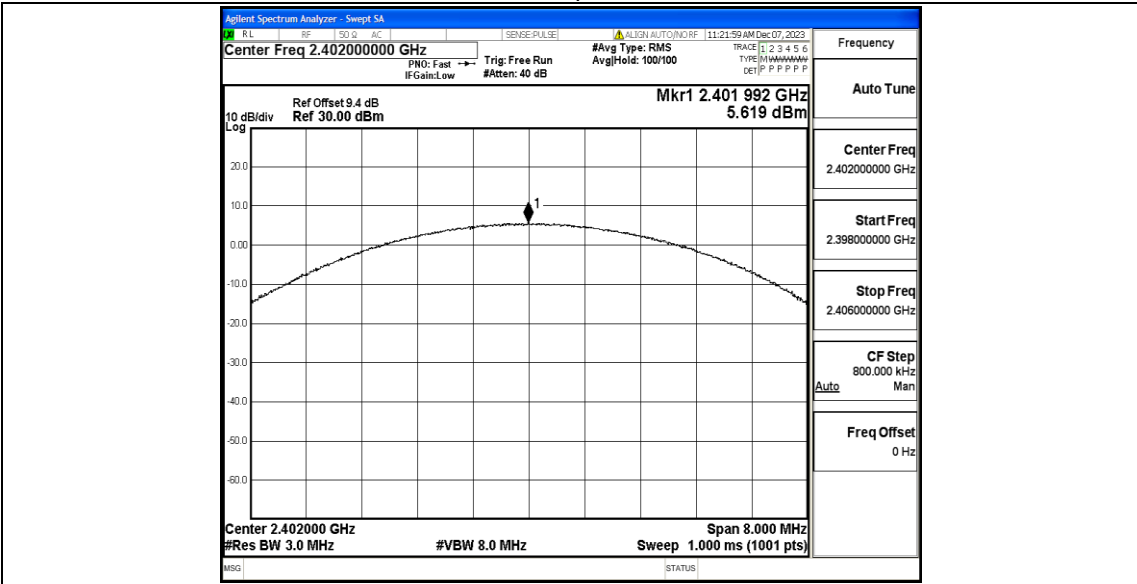
2DH5_Ant1_2441



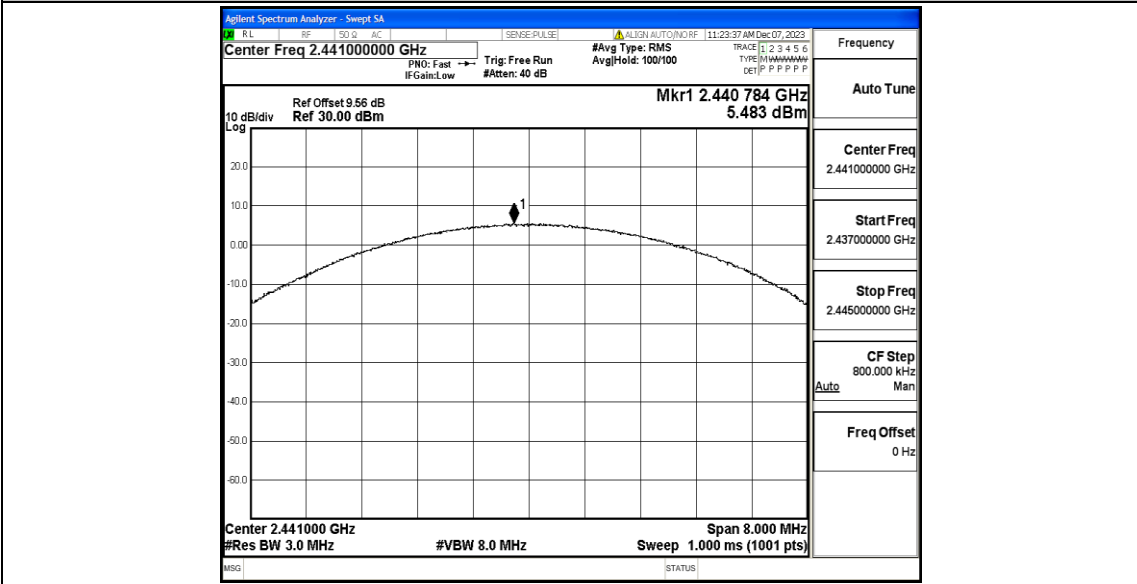
2DH5_Ant1_2480



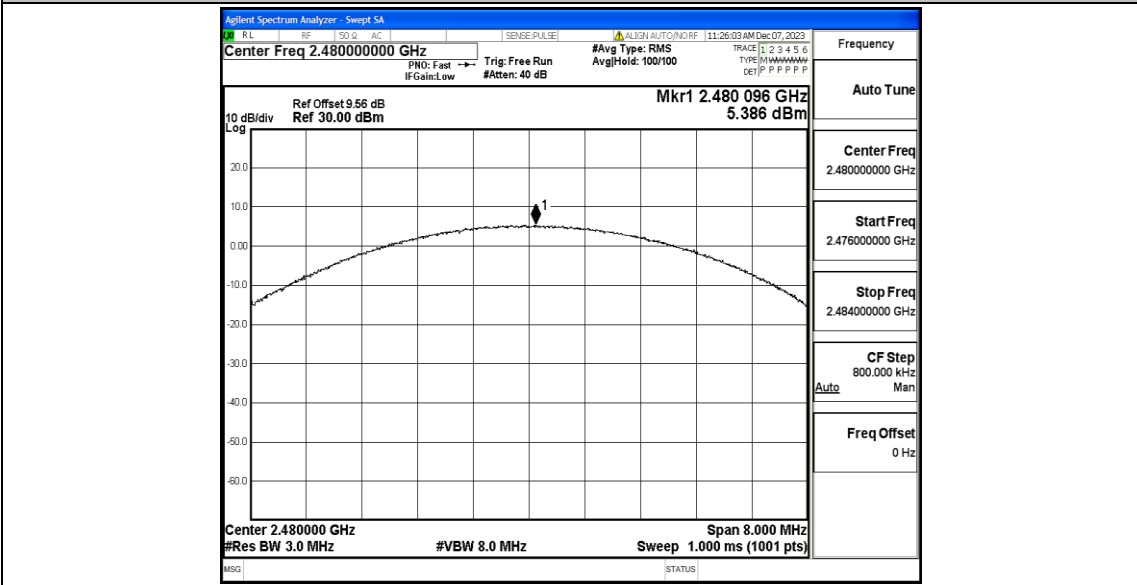
3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480

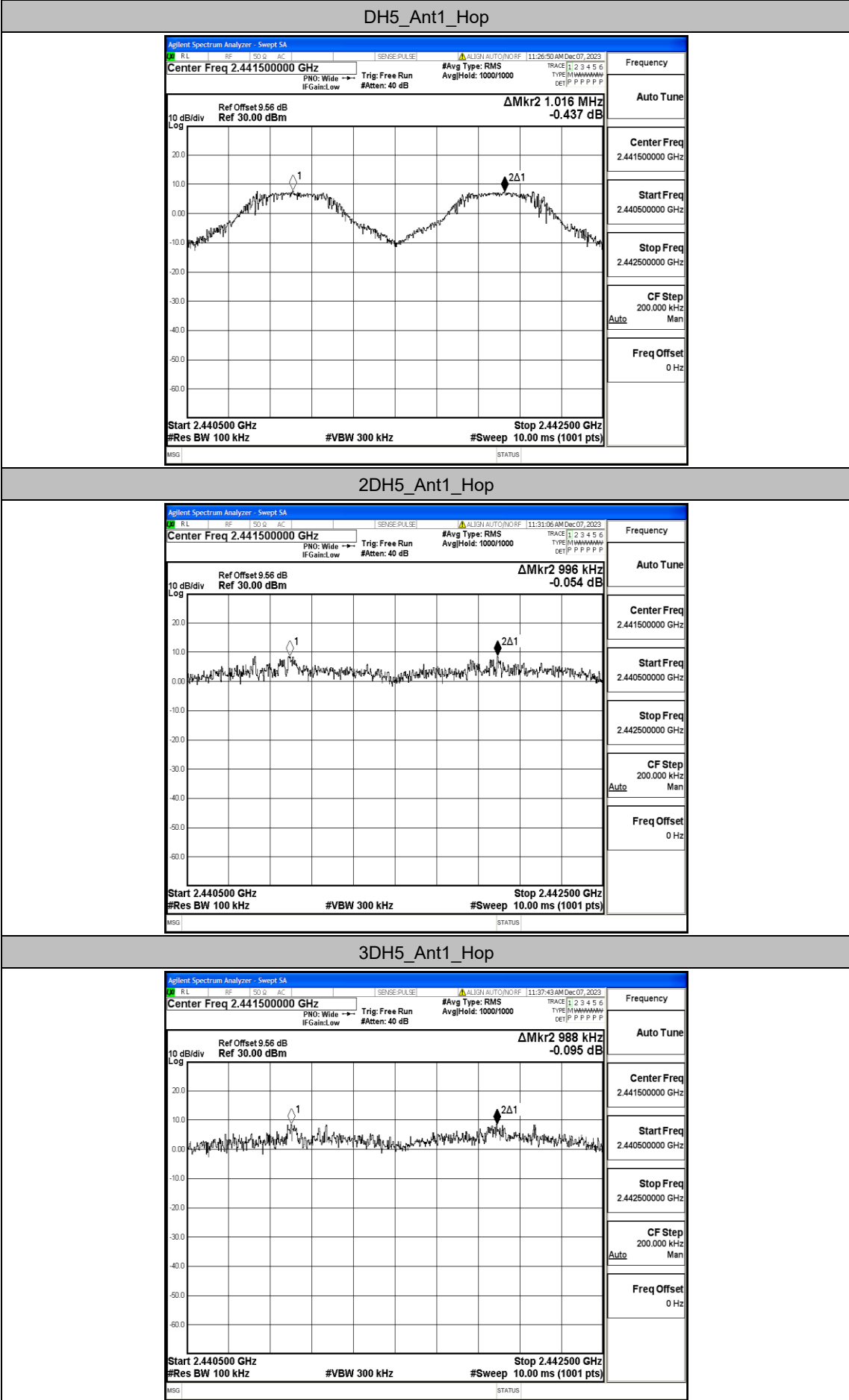


Appendix D: Carrier frequency separation

Test Result

TestMode	Antenna	Channel	Result[MHz]	Limit[MHz]	Verdict
DH5	Ant1	Hop	1.016	≥ 0.686	PASS
2DH5	Ant1	Hop	0.996	≥ 0.870	PASS
3DH5	Ant1	Hop	0.988	≥ 0.860	PASS

Test Graphs

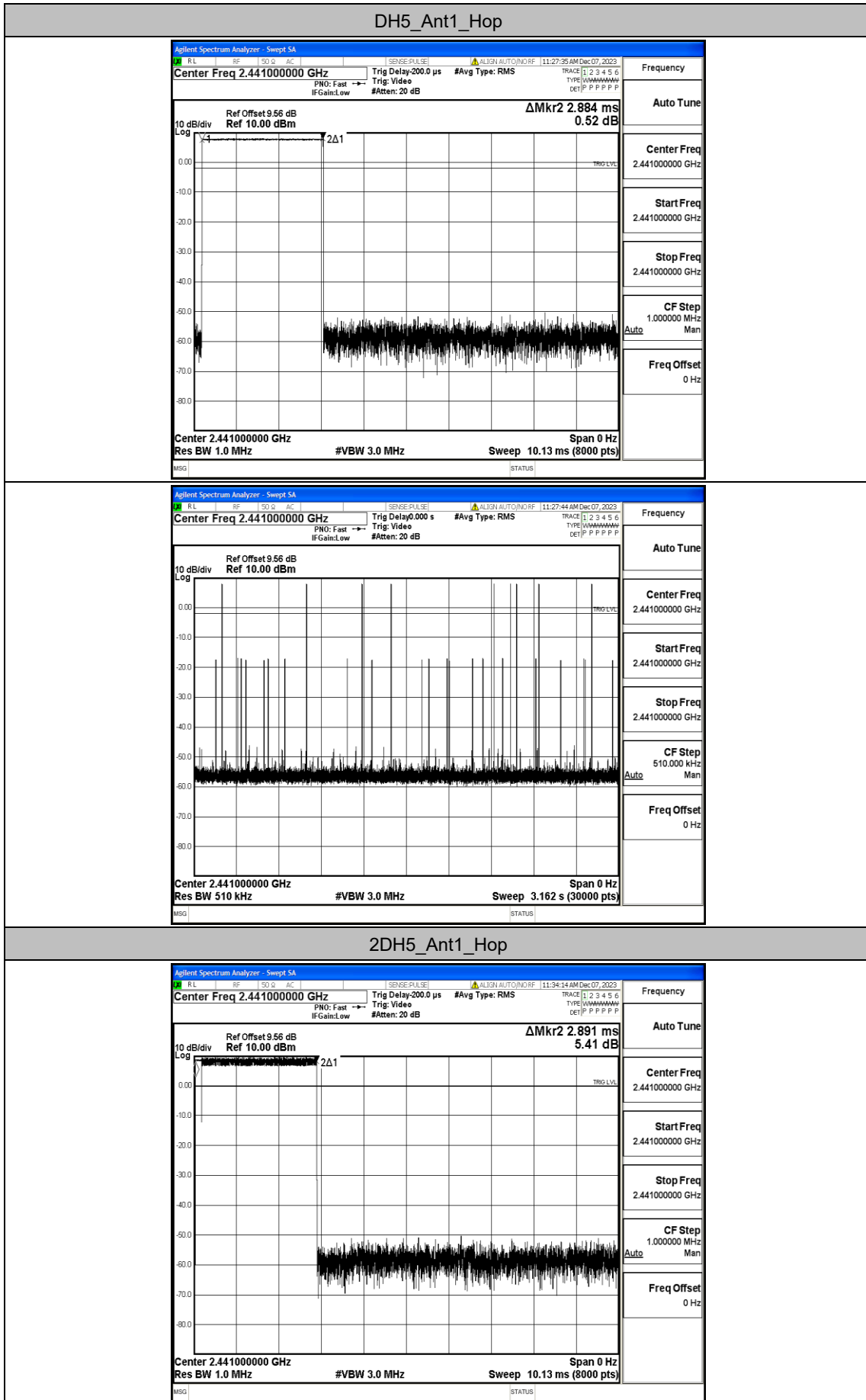


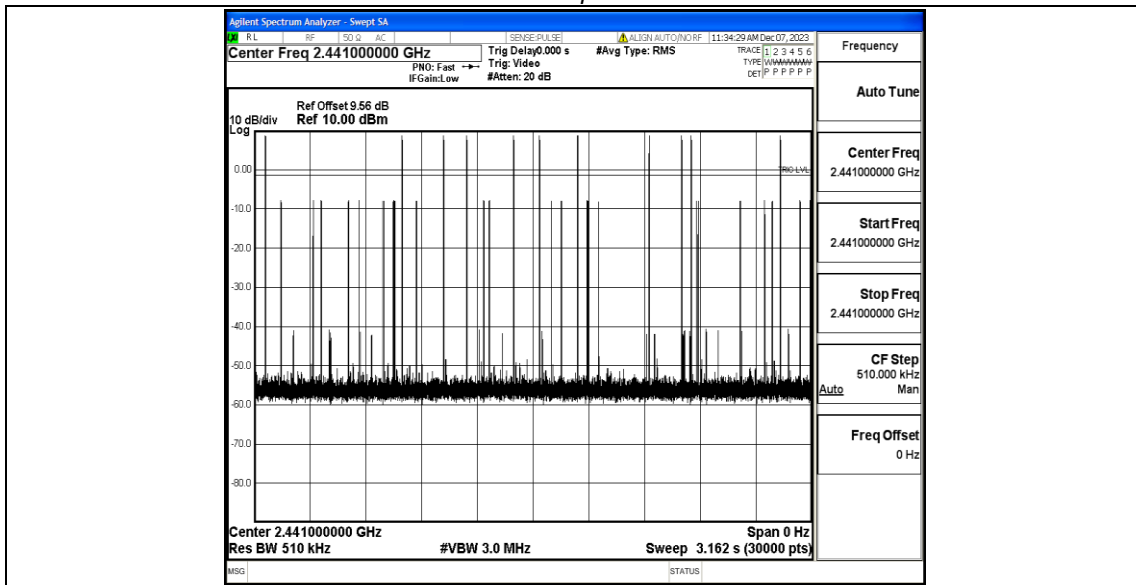
Appendix E: Time of occupancy

Test Result

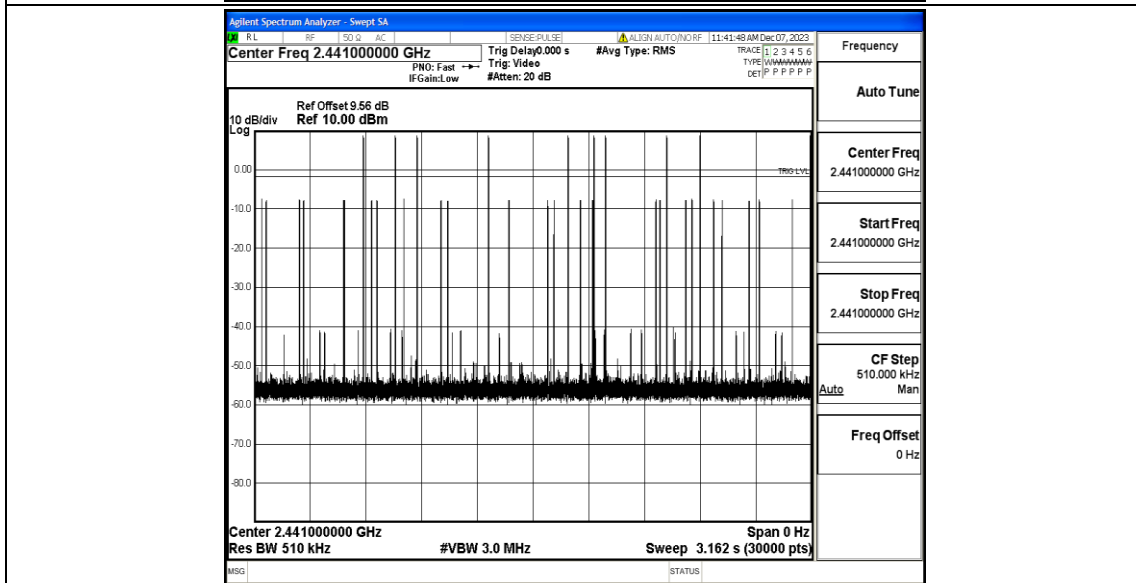
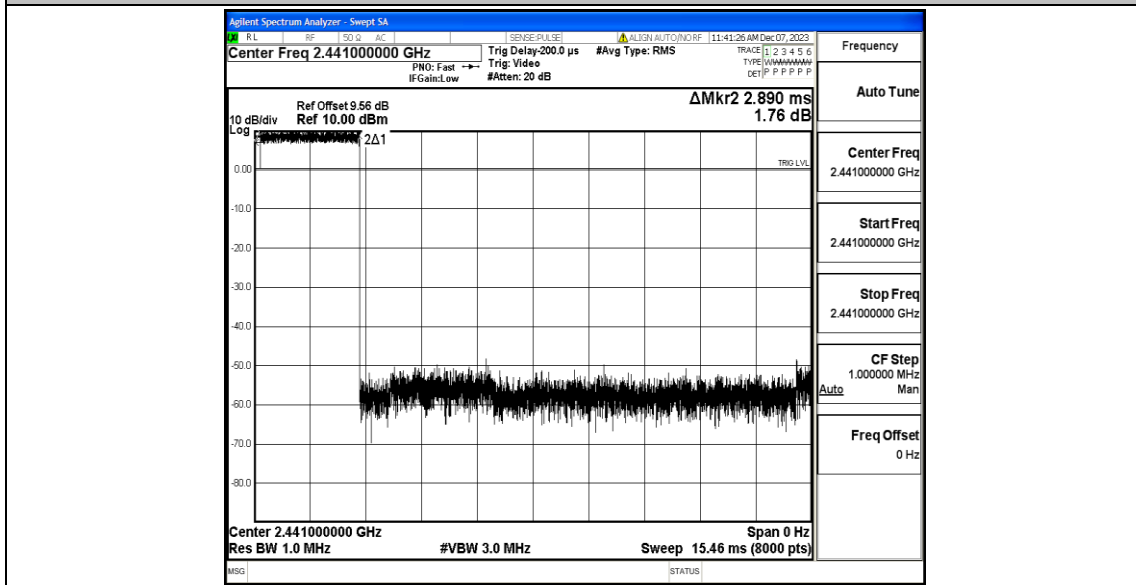
TestMode	Antenna	Channel	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH5	Ant1	Hop	2.884	110	0.317	≤0.4	PASS
2DH5	Ant1	Hop	2.891	120	0.347	≤0.4	PASS
3DH5	Ant1	Hop	2.890	110	0.318	≤0.4	PASS

Test Graphs





3DH5_Ant1_Hop

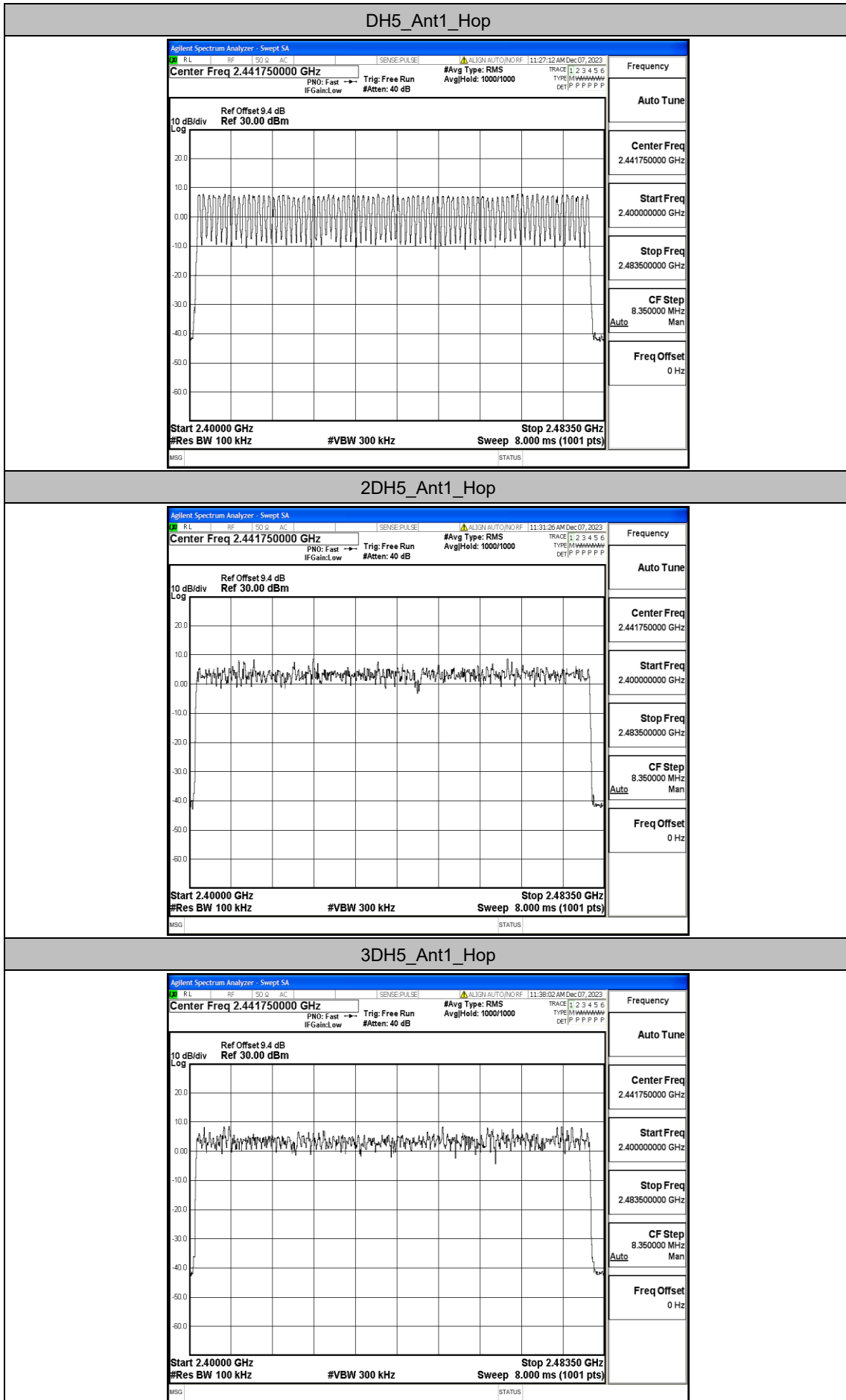


Appendix F: Number of hopping channels

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

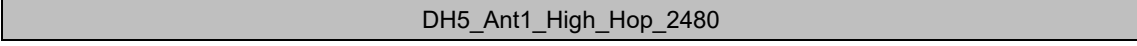
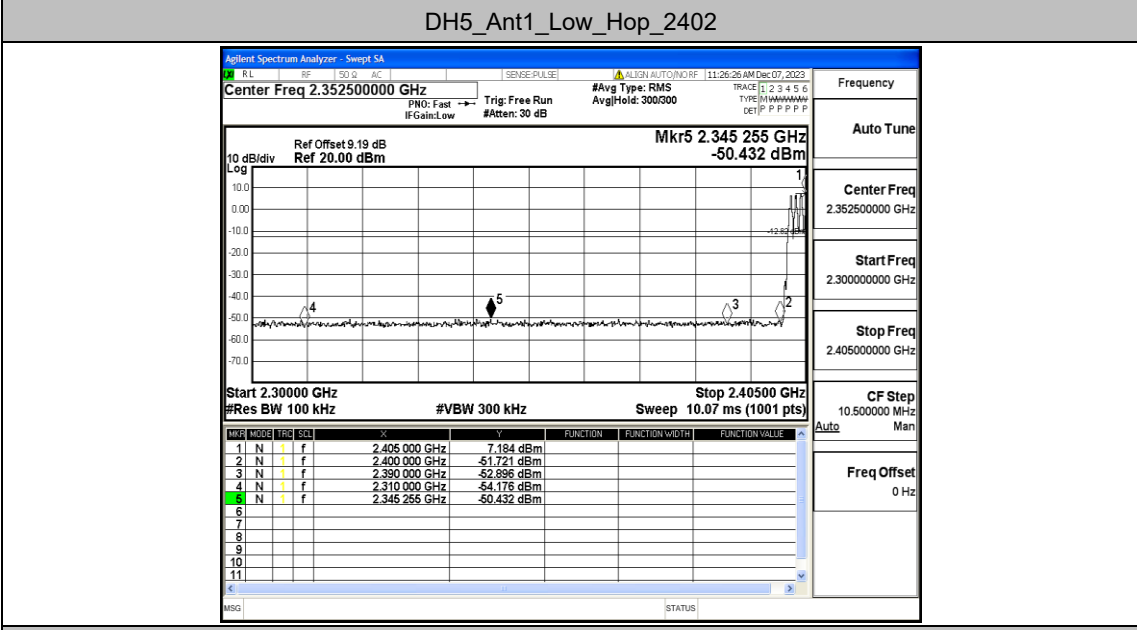
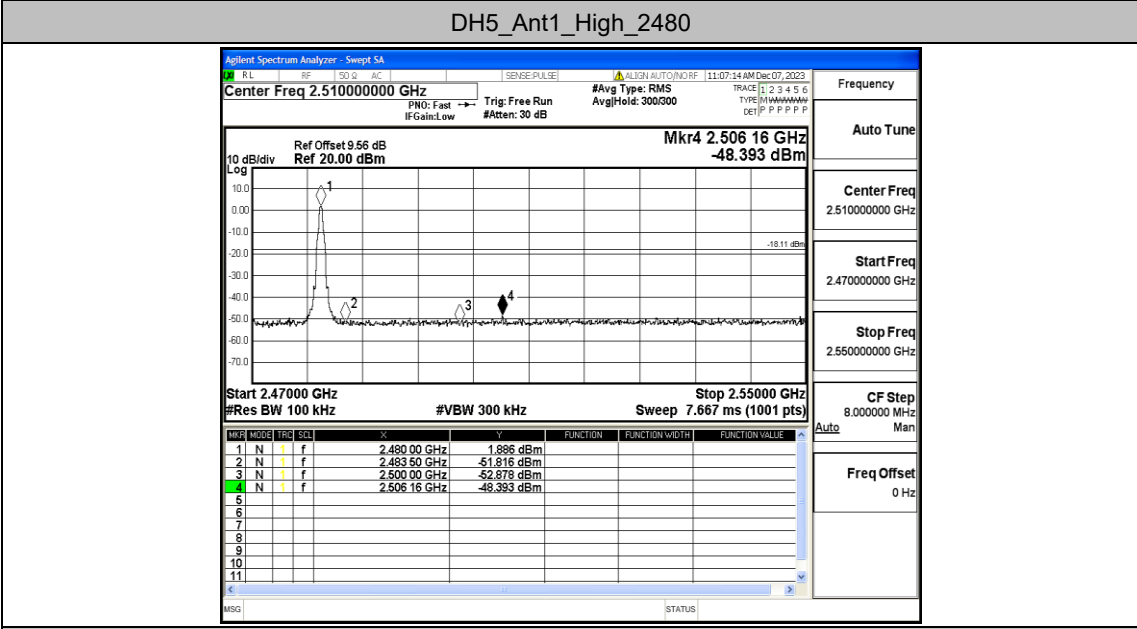
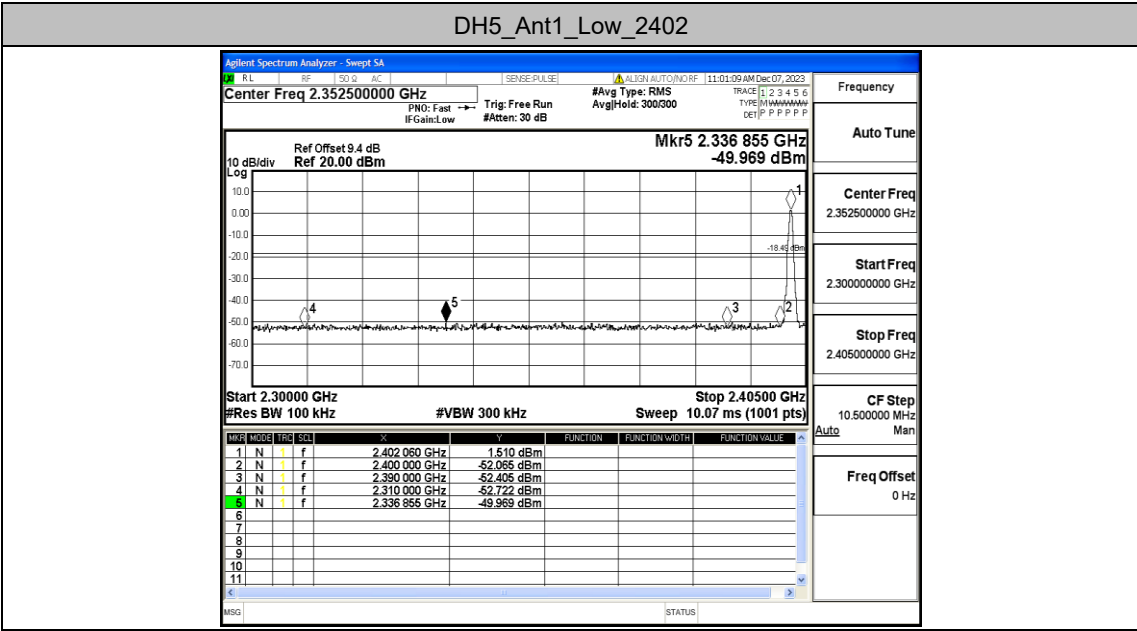


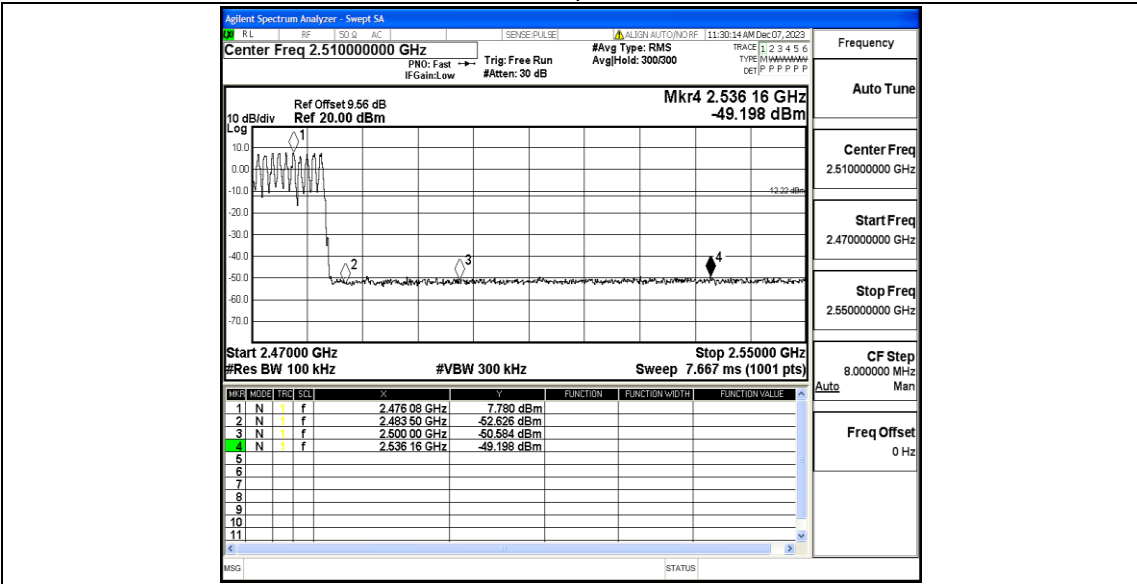
Appendix G: Band edge measurements

Test Result

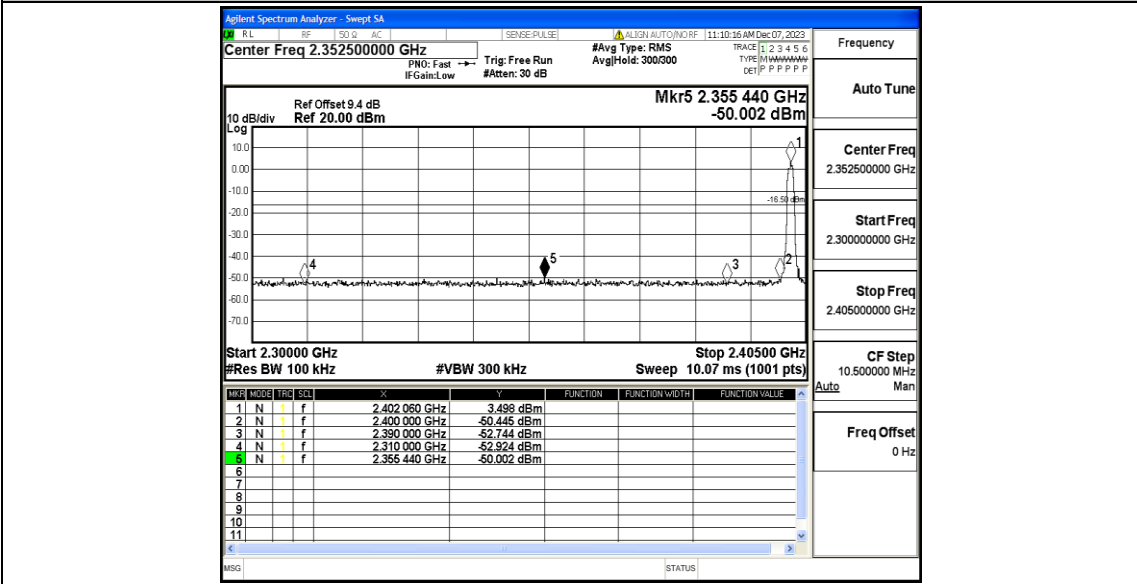
TestMode	Antenna	ChName	Channel	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	1.51	-49.97	≤-18.49	PASS
		High	2480	1.89	-48.39	≤-18.11	PASS
		Low	Hop_2402	7.18	-50.43	≤-12.82	PASS
		High	Hop_2480	7.78	-49.2	≤-12.22	PASS
2DH5	Ant1	Low	2402	3.50	-50	≤-16.5	PASS
		High	2480	3.61	-48.68	≤-16.39	PASS
		Low	Hop_2402	4.55	-49.89	≤-15.45	PASS
		High	Hop_2480	6.21	-49.24	≤-13.79	PASS
3DH5	Ant1	Low	2402	3.89	-48.94	≤-16.11	PASS
		High	2480	3.30	-48.57	≤-16.7	PASS
		Low	Hop_2402	4.52	-50.05	≤-15.49	PASS
		High	Hop_2480	8.39	-48.73	≤-11.61	PASS

Test Graphs

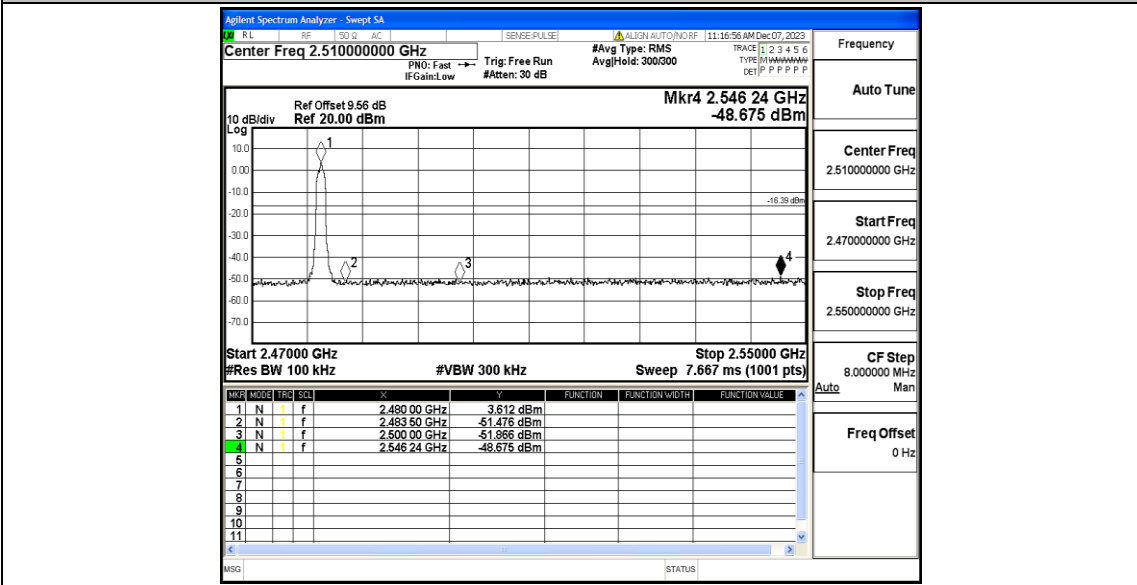




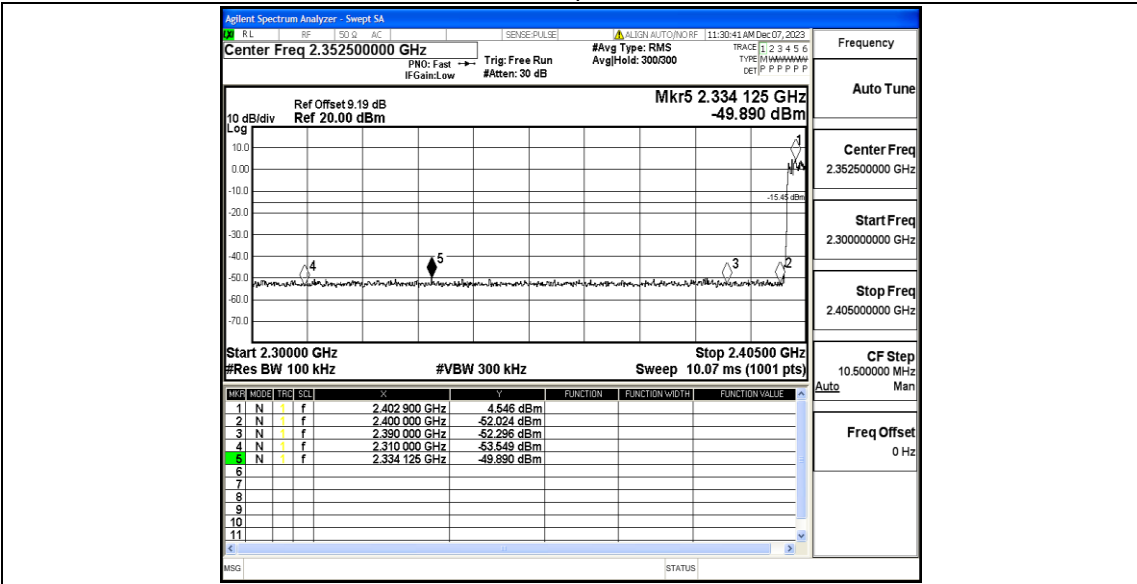
2DH5_Ant1_Low_2402



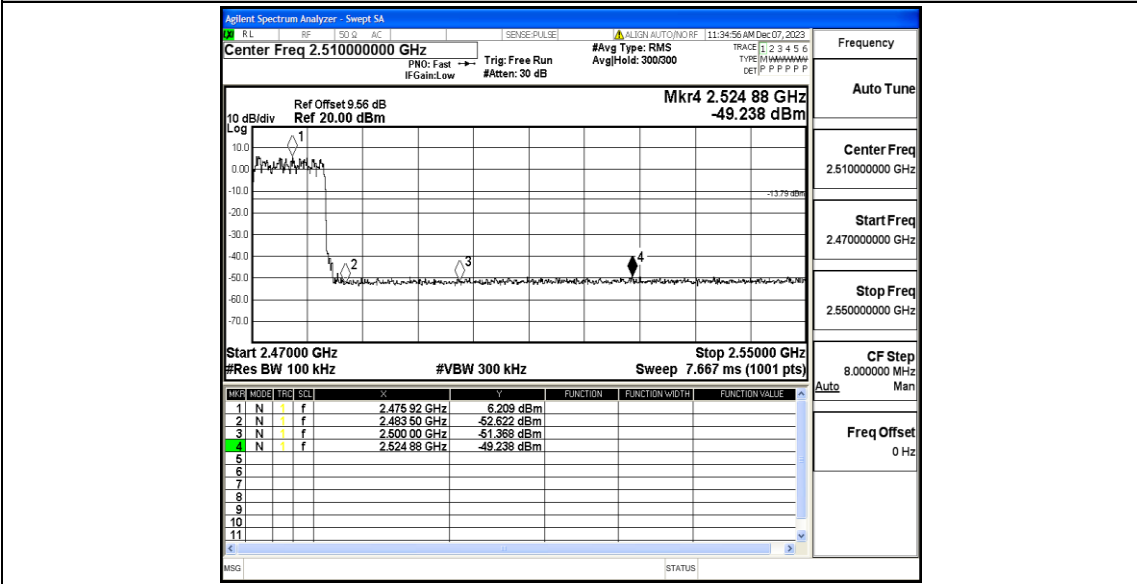
2DH5_Ant1_High_2480



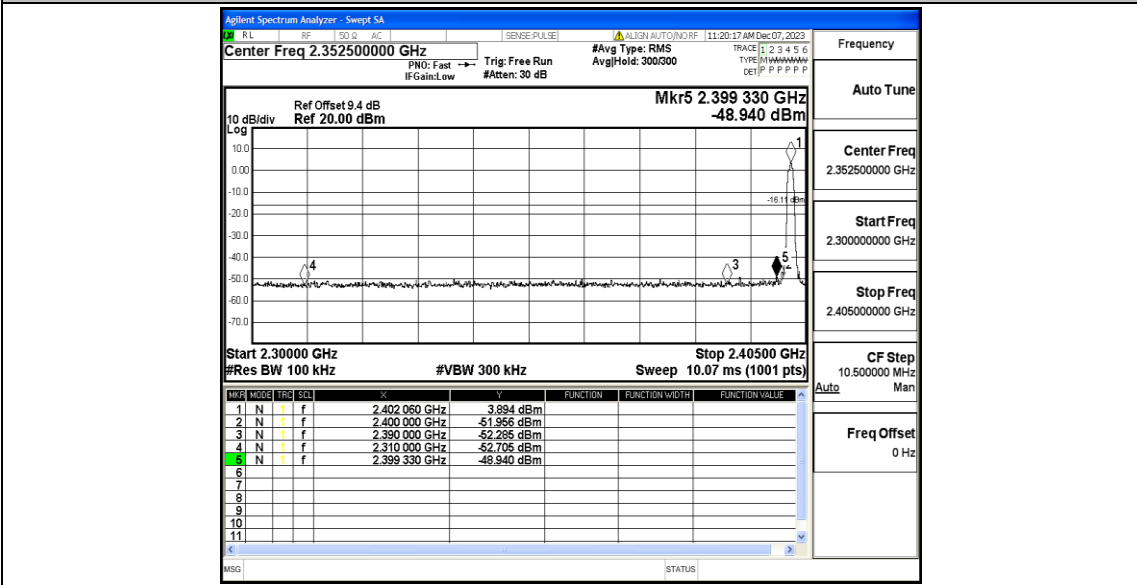
2DH5_Ant1_Low_Hop_2402



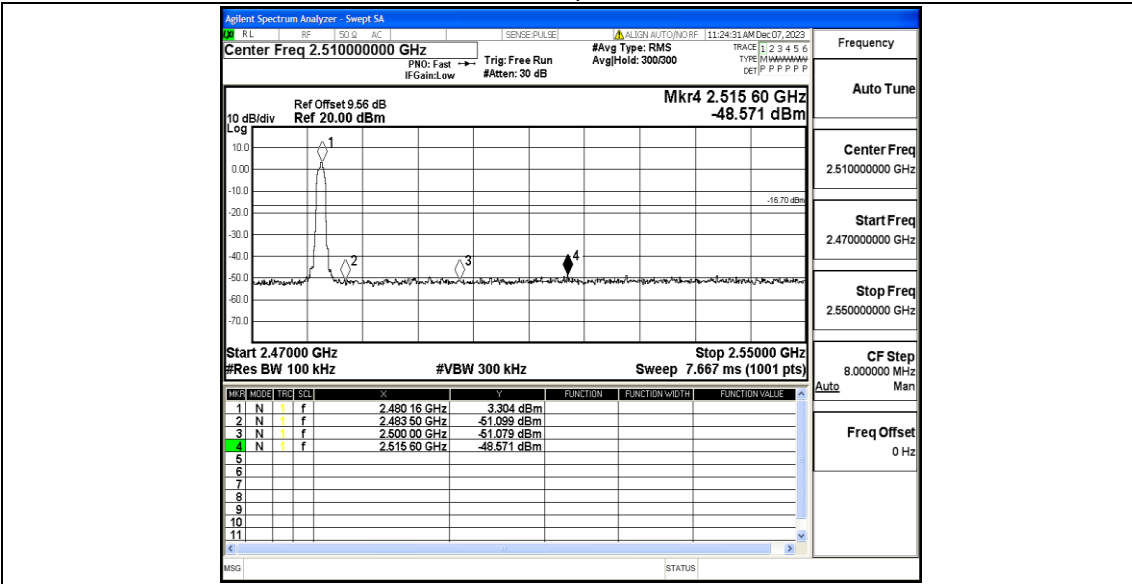
2DH5_Ant1_High_Hop_2480



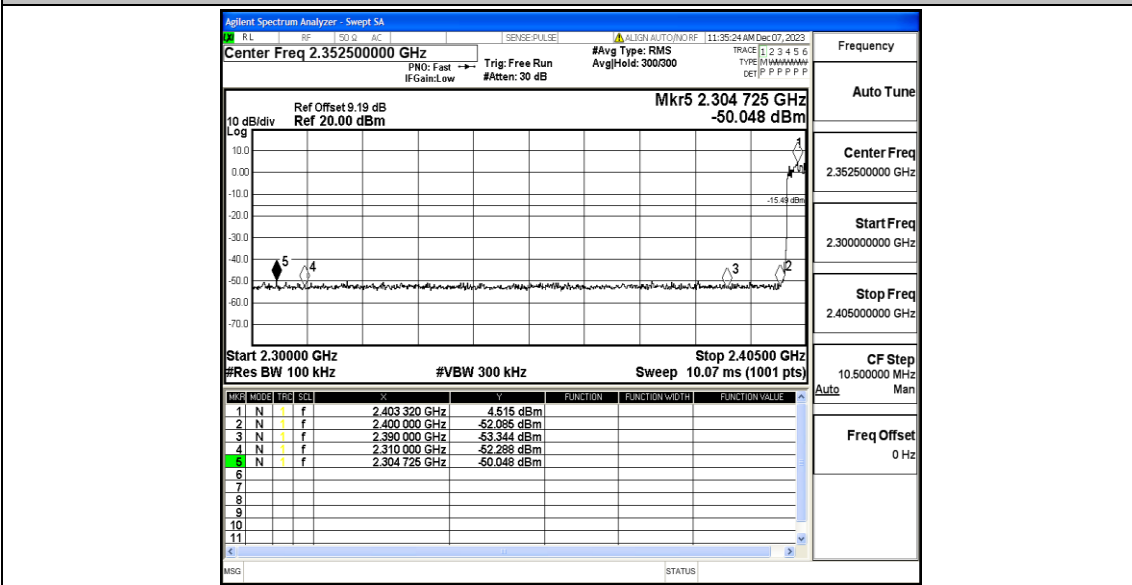
3DH5_Ant1_Low_2402



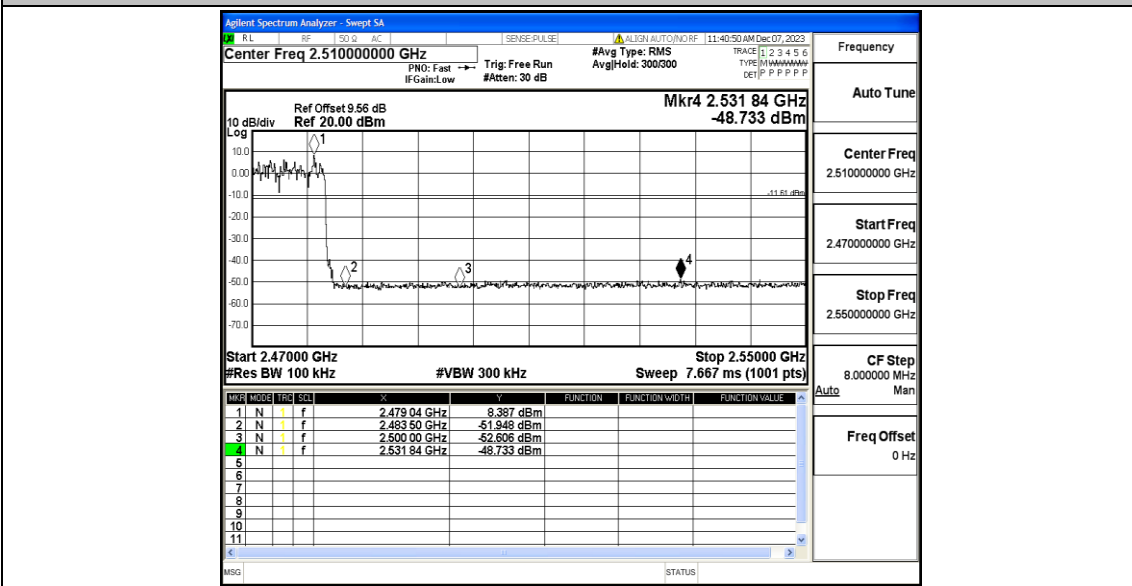
3DH5_Ant1_High_2480



3DH5_Ant1_Low_Hop_2402



3DH5_Ant1_High_Hop_2480

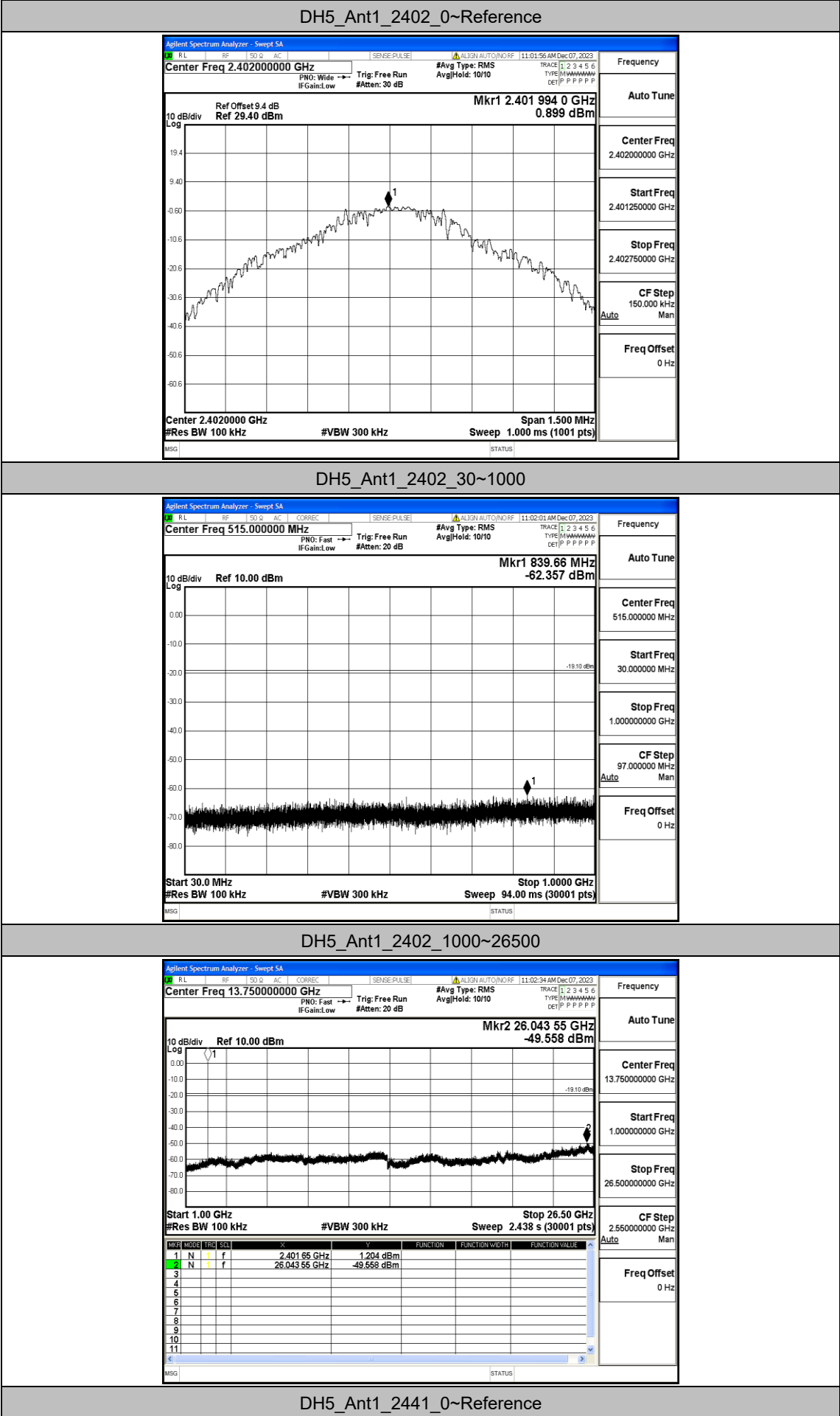


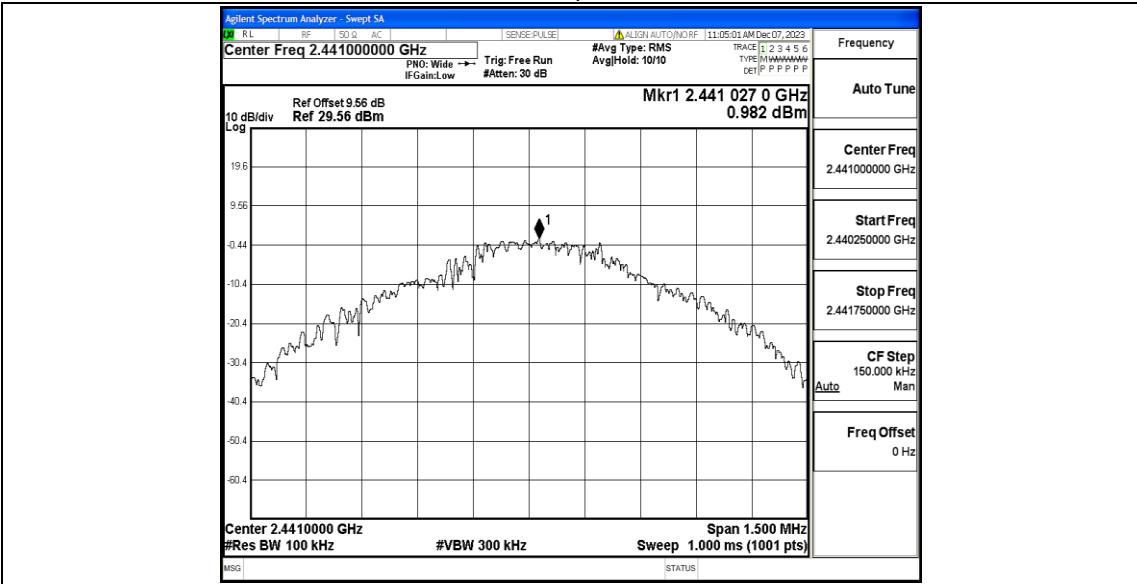
Appendix H: Conducted Spurious Emission

Test Result

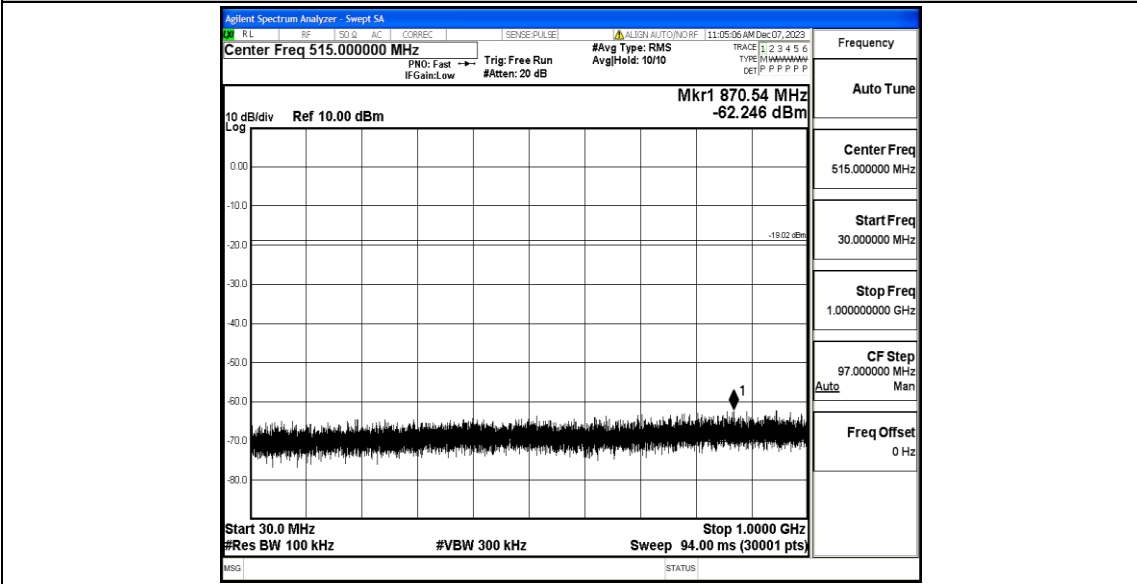
TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	Reference	0.90	0.90	---	PASS
			30~1000	0.90	-62.36	≤-19.1	PASS
			1000~26500	0.90	-49.56	≤-19.1	PASS
		2441	Reference	0.98	0.98	---	PASS
			30~1000	0.98	-62.25	≤-19.02	PASS
			1000~26500	0.98	-50.11	≤-19.02	PASS
		2480	Reference	1.54	1.54	---	PASS
			30~1000	1.54	-62.64	≤-18.46	PASS
			1000~26500	1.54	-49.56	≤-18.46	PASS
2DH5	Ant1	2402	Reference	2.84	2.84	---	PASS
			30~1000	2.84	-62.47	≤-17.16	PASS
			1000~26500	2.84	-49.78	≤-17.16	PASS
		2441	Reference	0.03	0.03	---	PASS
			30~1000	0.03	-62.01	≤-19.97	PASS
			1000~26500	0.03	-49.81	≤-19.97	PASS
		2480	Reference	2.46	2.46	---	PASS
			30~1000	2.46	-62.18	≤-17.54	PASS
			1000~26500	2.46	-49.57	≤-17.54	PASS
3DH5	Ant1	2402	Reference	0.31	0.31	---	PASS
			30~1000	0.31	-62.51	≤-19.69	PASS
			1000~26500	0.31	-50.26	≤-19.69	PASS
		2441	Reference	-0.11	-0.11	---	PASS
			30~1000	-0.11	-61.71	≤-20.11	PASS
			1000~26500	-0.11	-50.23	≤-20.11	PASS
		2480	Reference	0.01	0.01	---	PASS
			30~1000	0.01	-61.75	≤-19.99	PASS
			1000~26500	0.01	-49.88	≤-19.99	PASS

Test Graphs

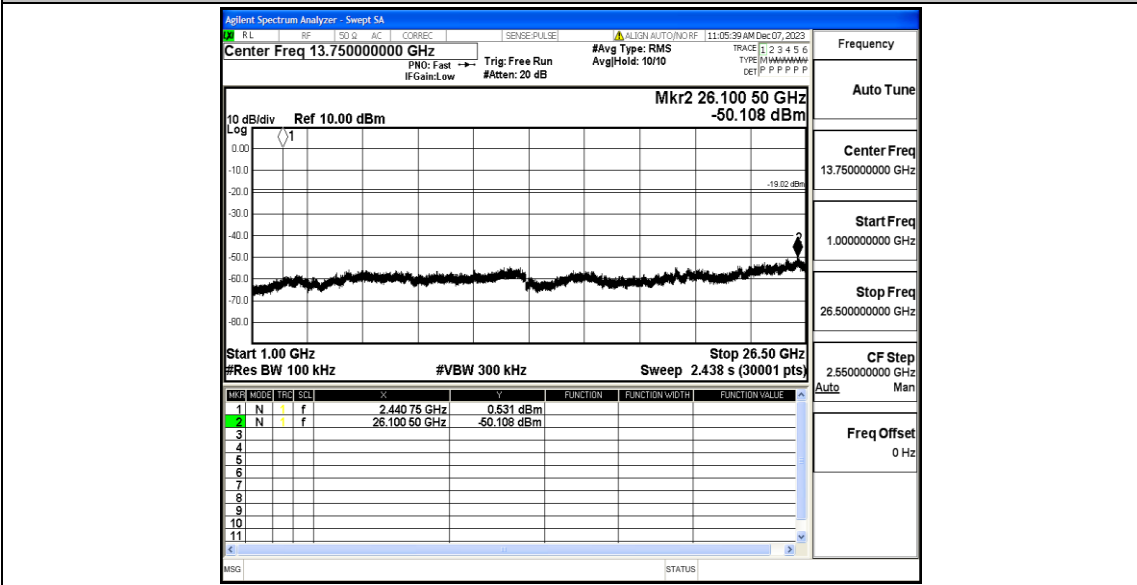




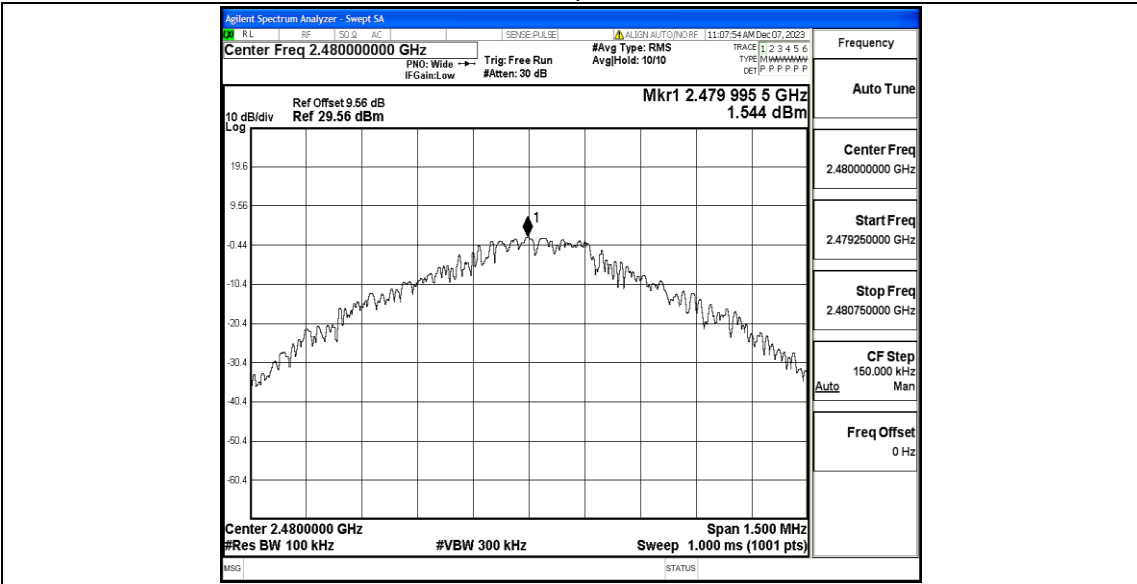
DH5_Ant1_2441_30~1000



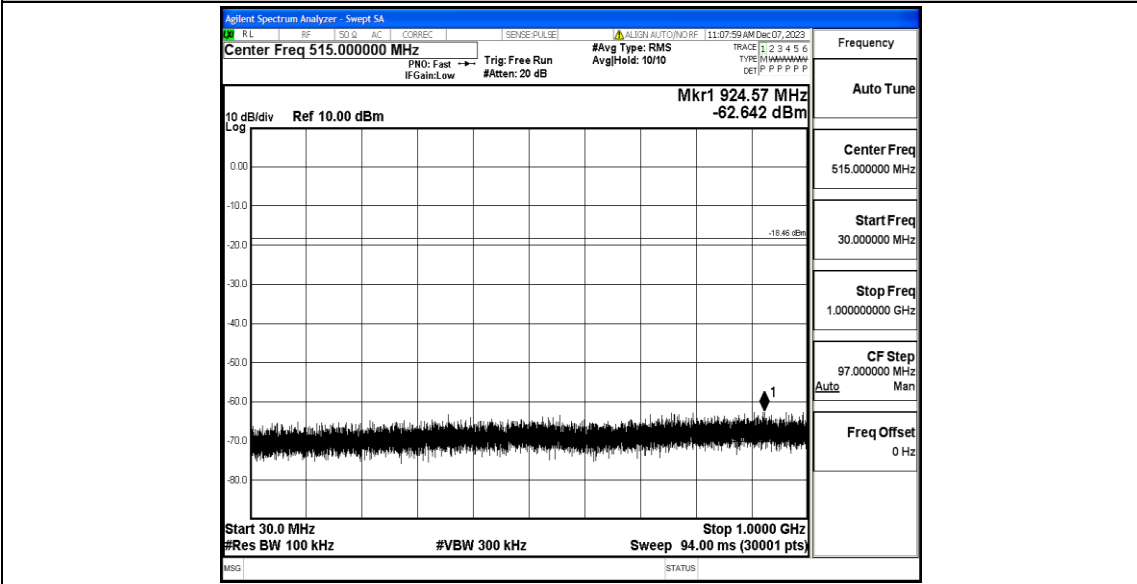
DH5_Ant1_2441_1000~26500



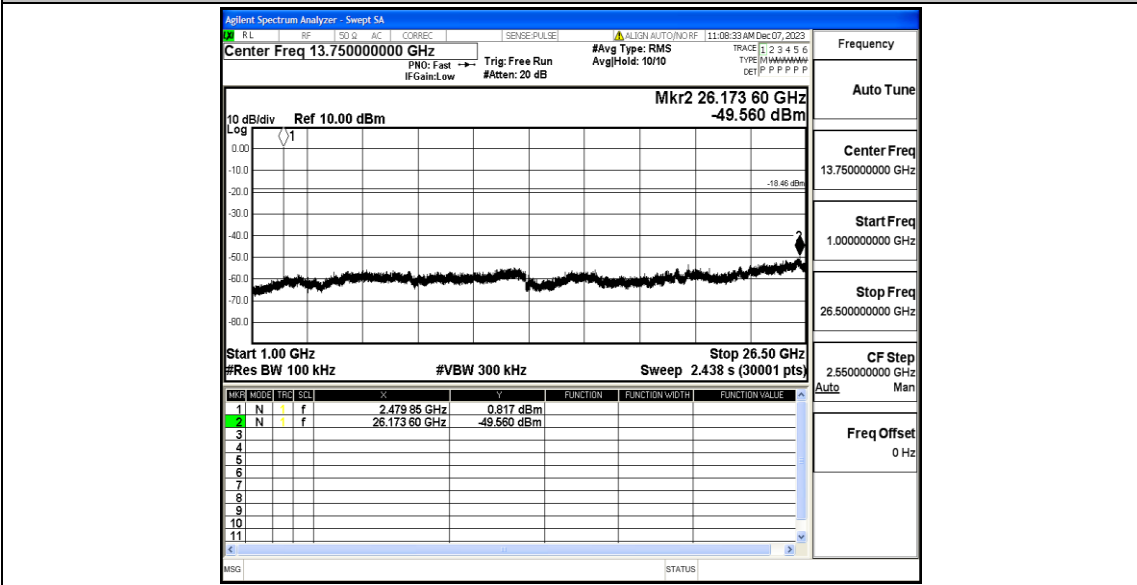
DH5_Ant1_2480_0~Reference



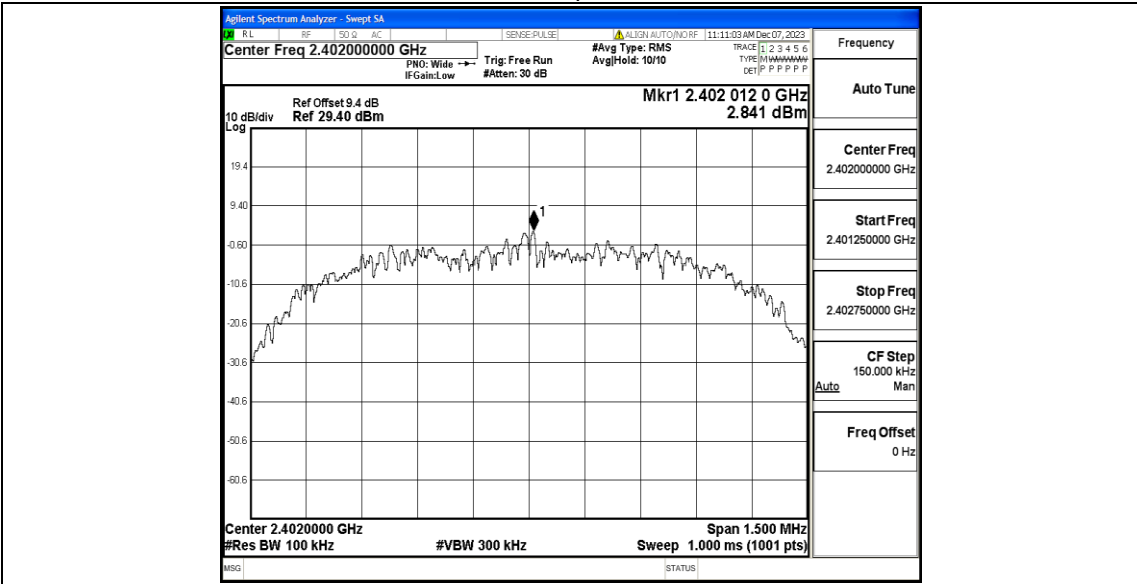
DH5_Ant1_2480_30~1000



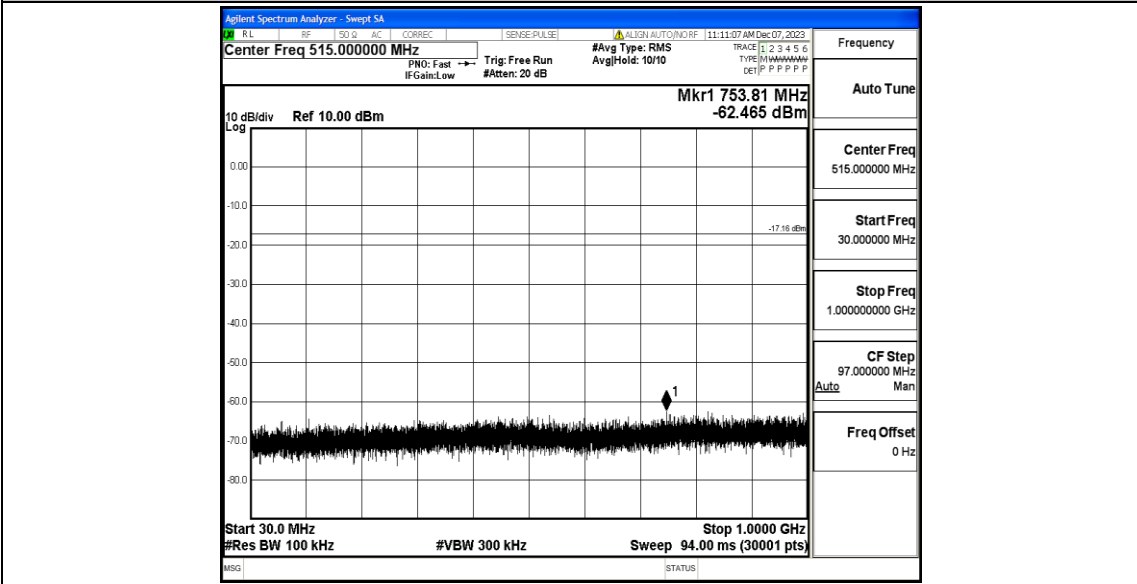
DH5_Ant1_2480_1000~26500



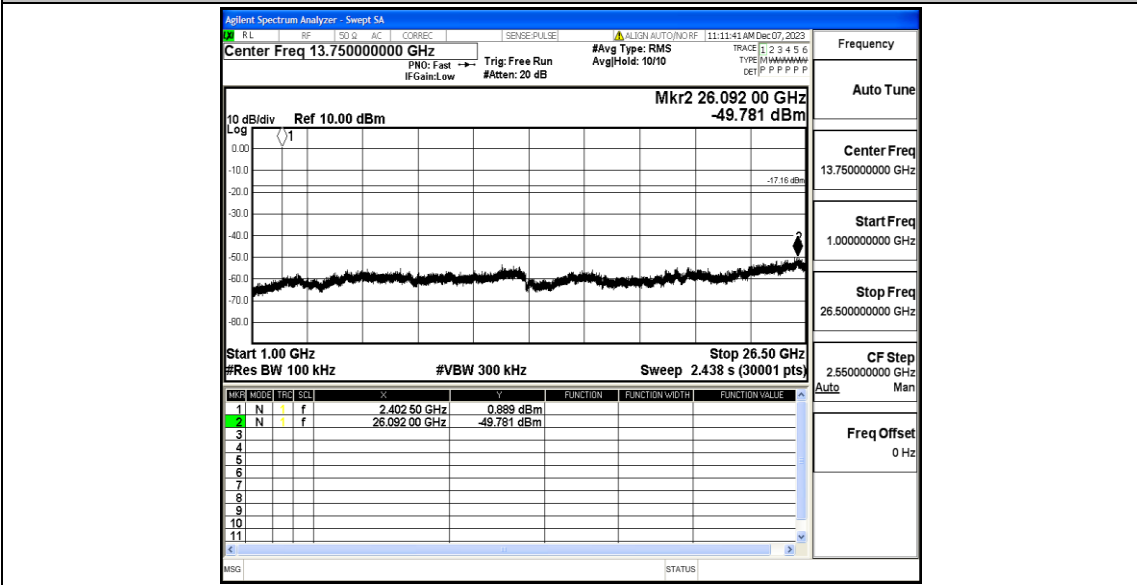
2DH5_Ant1_2402_0~Reference



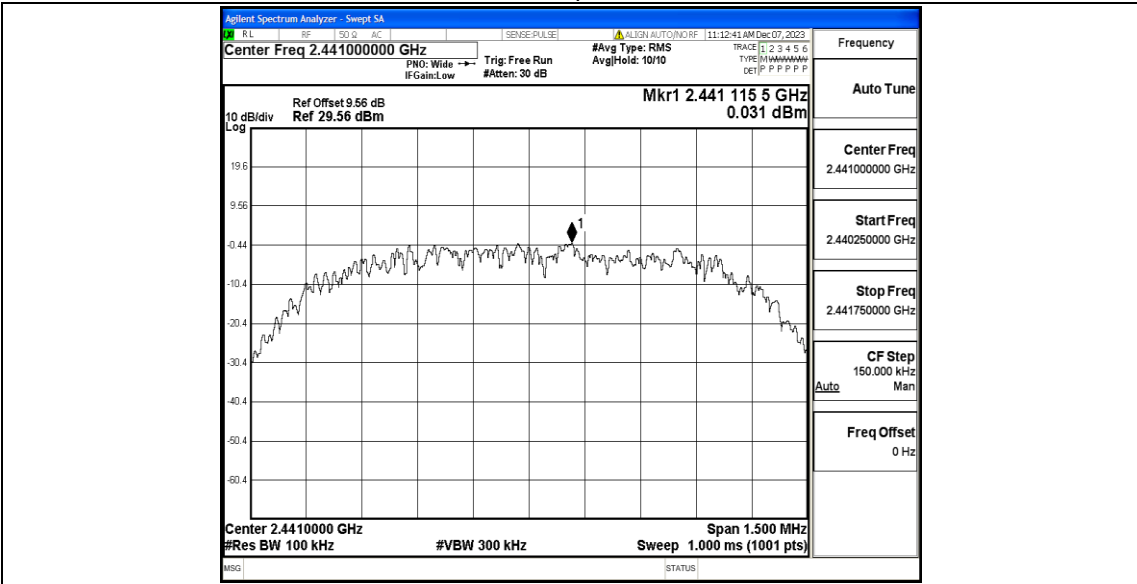
2DH5_Ant1_2402_30~1000



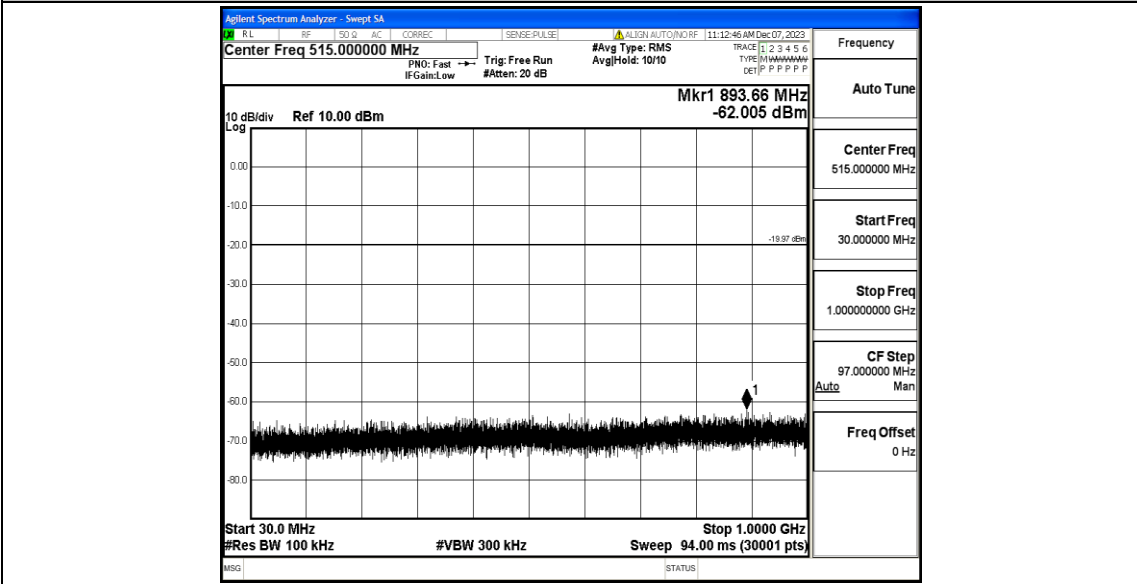
2DH5_Ant1_2402_1000~26500



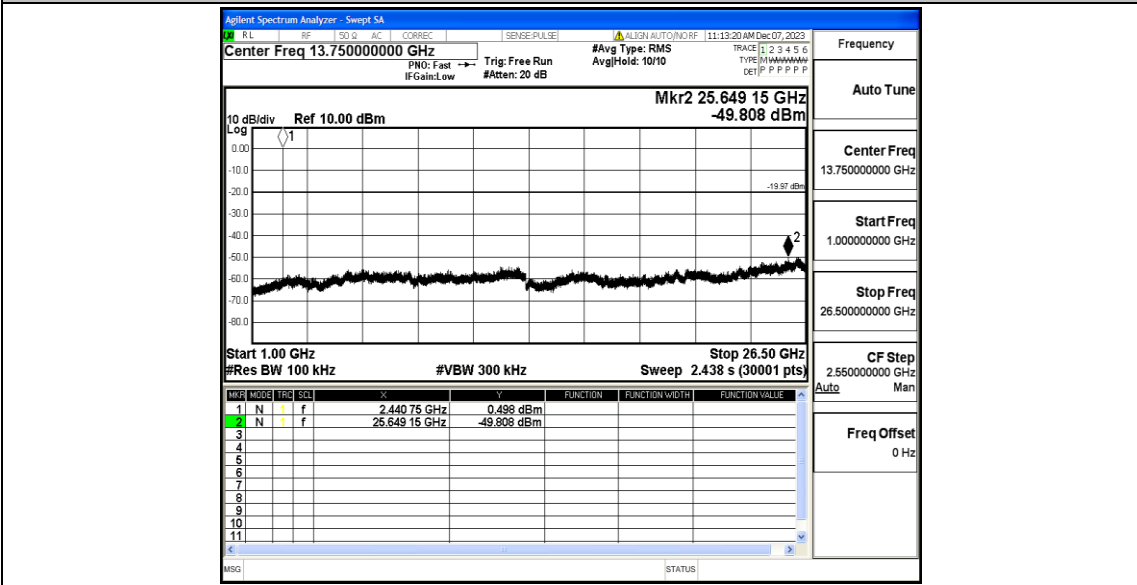
2DH5_Ant1_2441_0~Reference



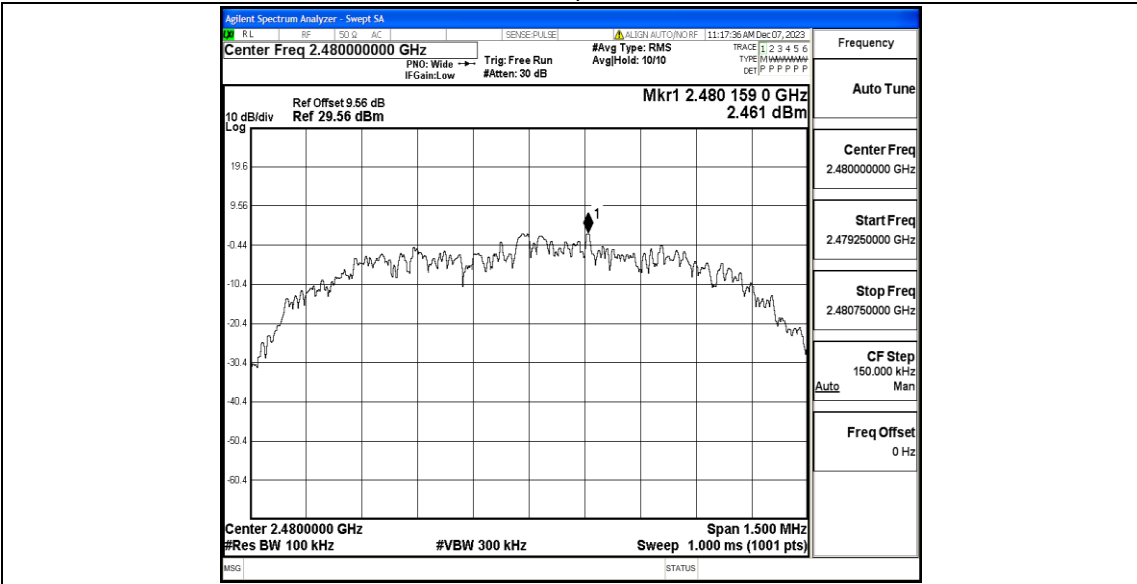
2DH5_Ant1_2441_30~1000



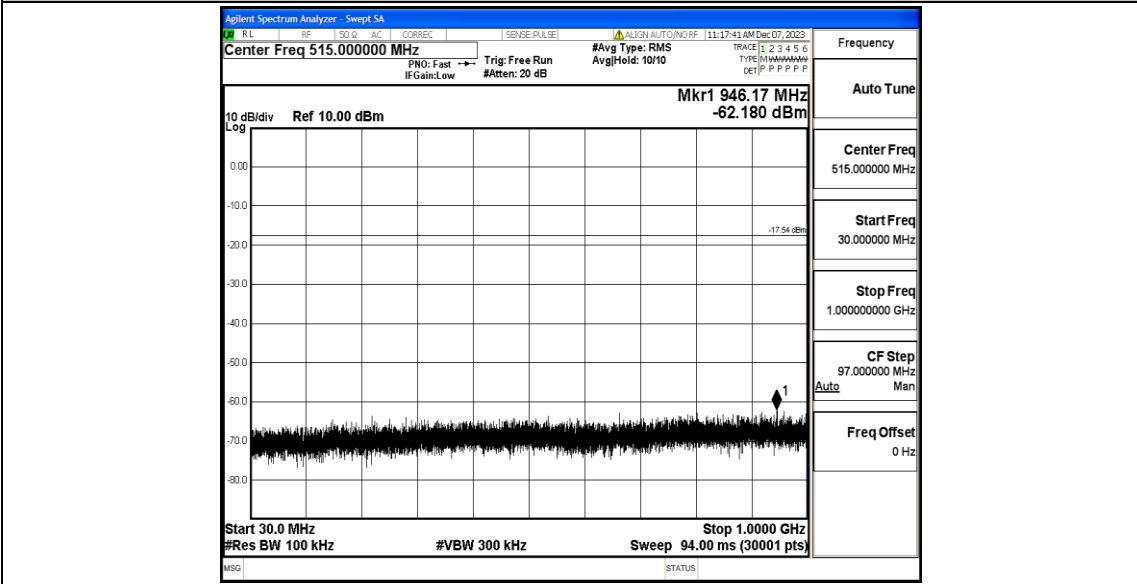
2DH5_Ant1_2441_1000~26500



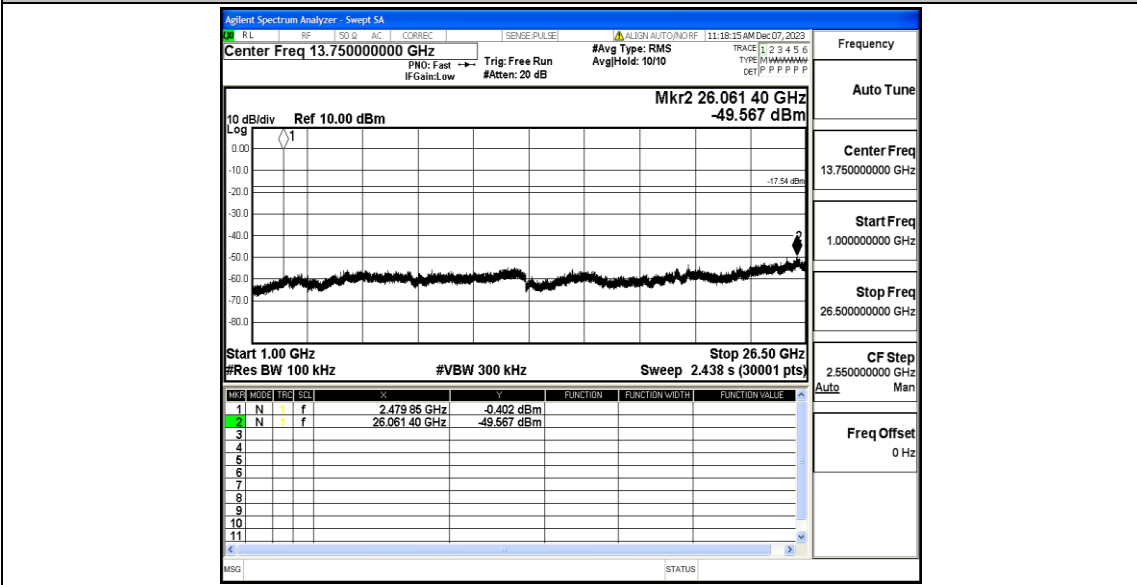
2DH5_Ant1_2480_0~Reference



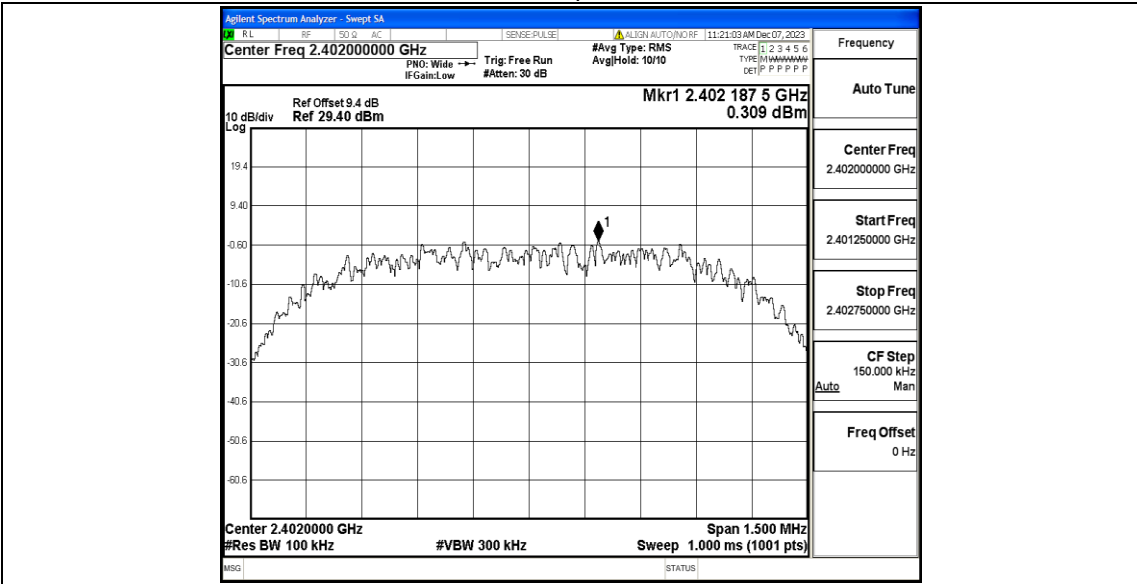
2DH5_Ant1_2480_30~1000



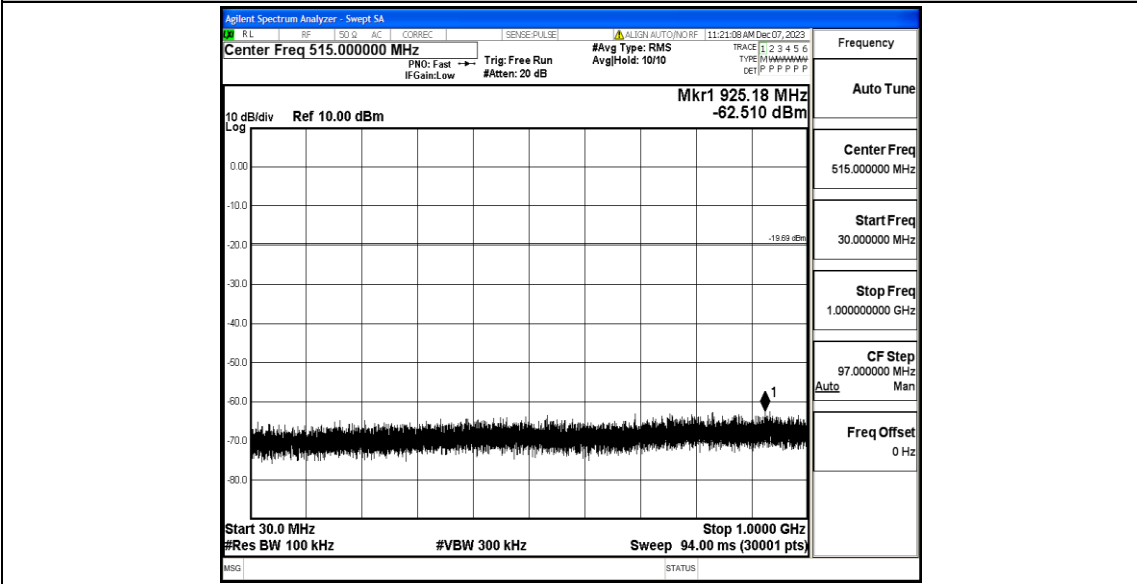
2DH5_Ant1_2480_1000~26500



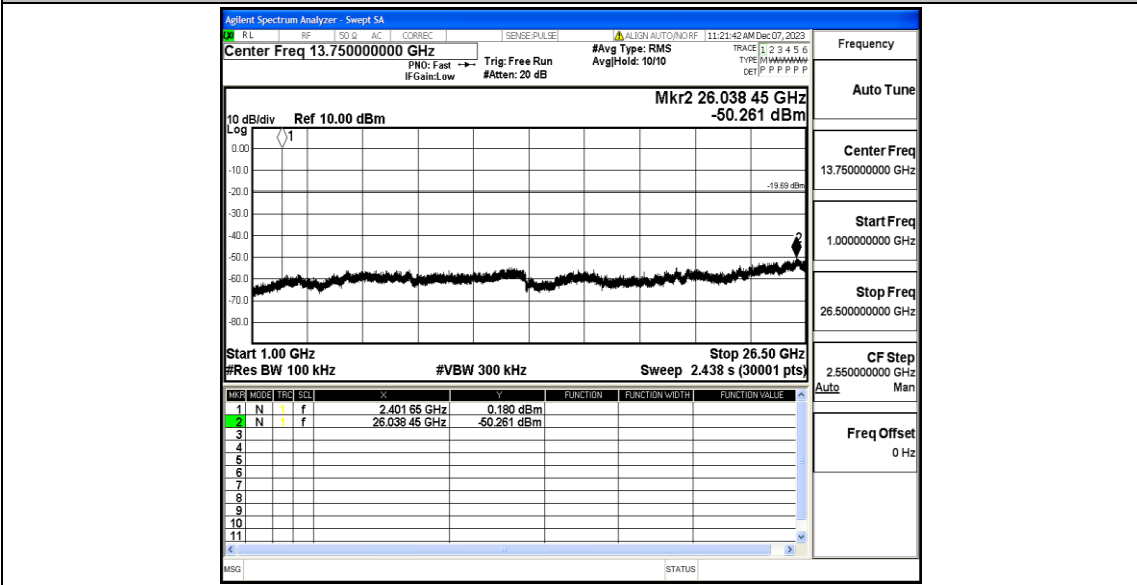
3DH5_Ant1_2402_0~Reference



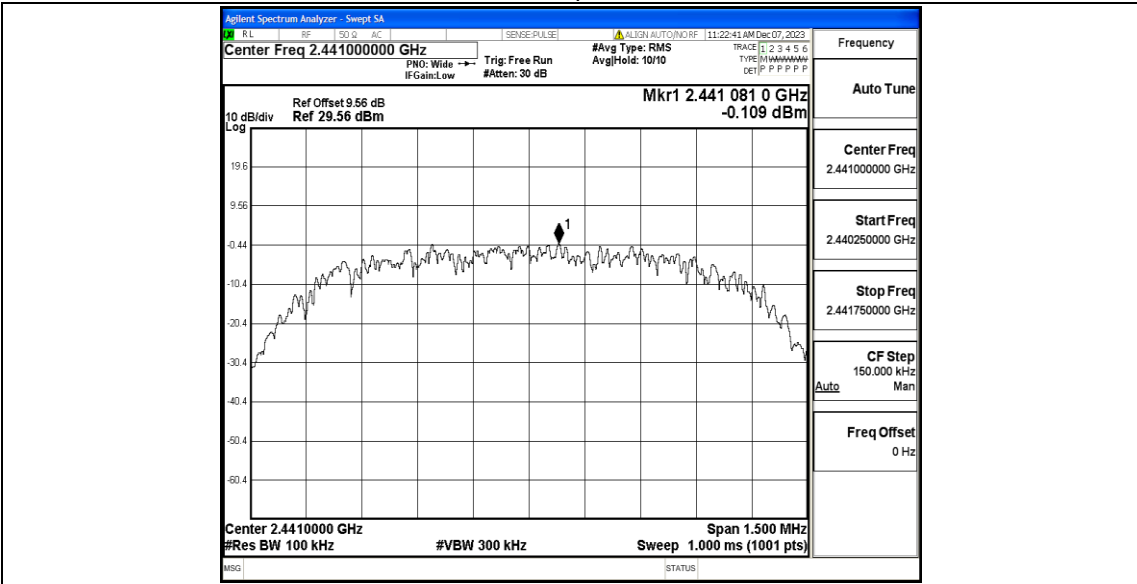
3DH5_Ant1_2402_30~1000



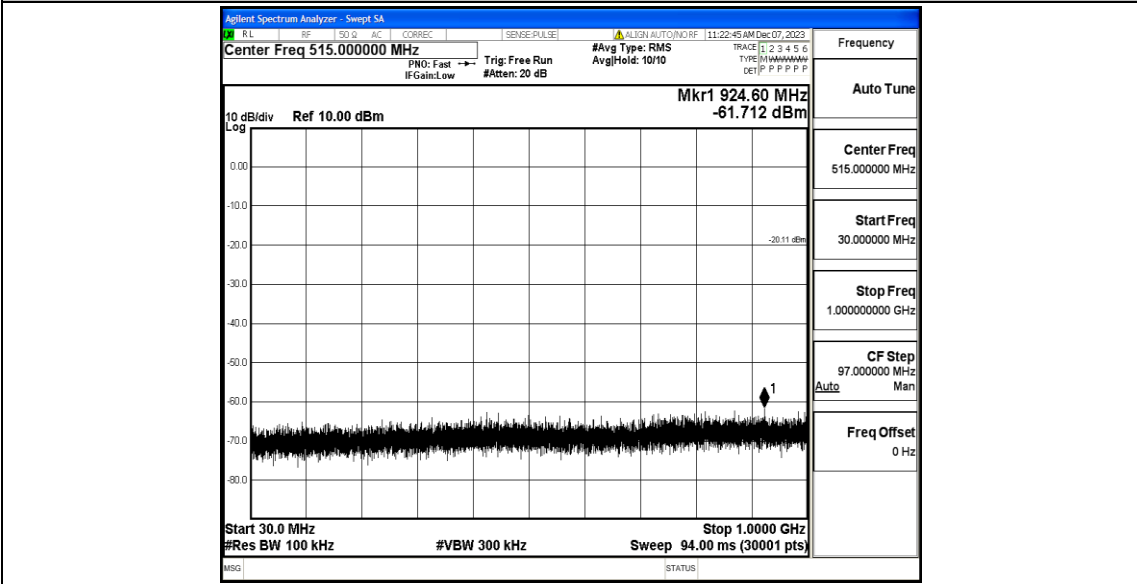
3DH5_Ant1_2402_1000~26500



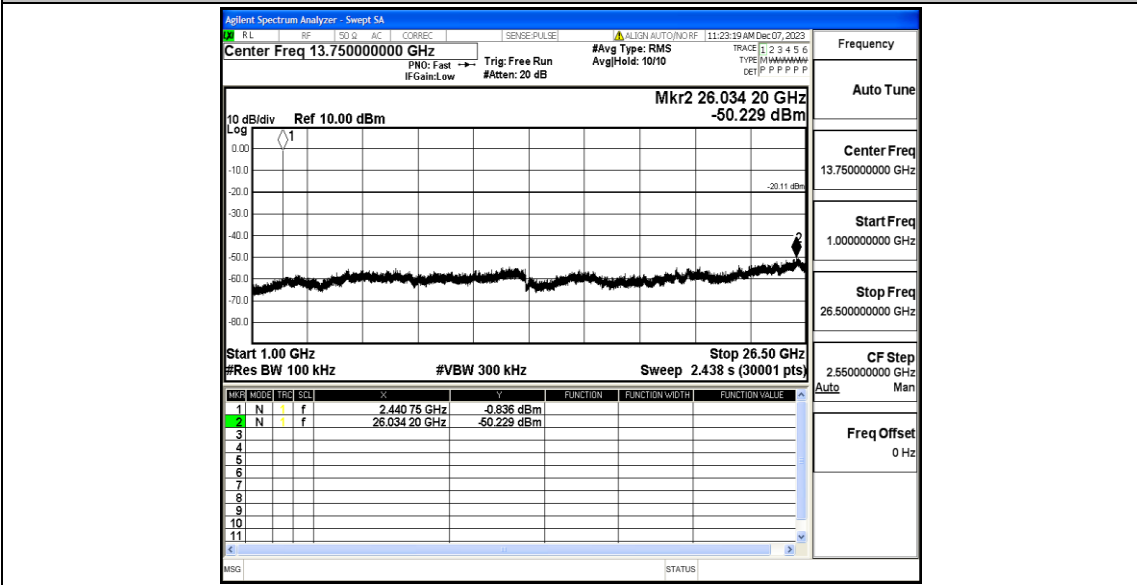
3DH5_Ant1_2441_0~Reference



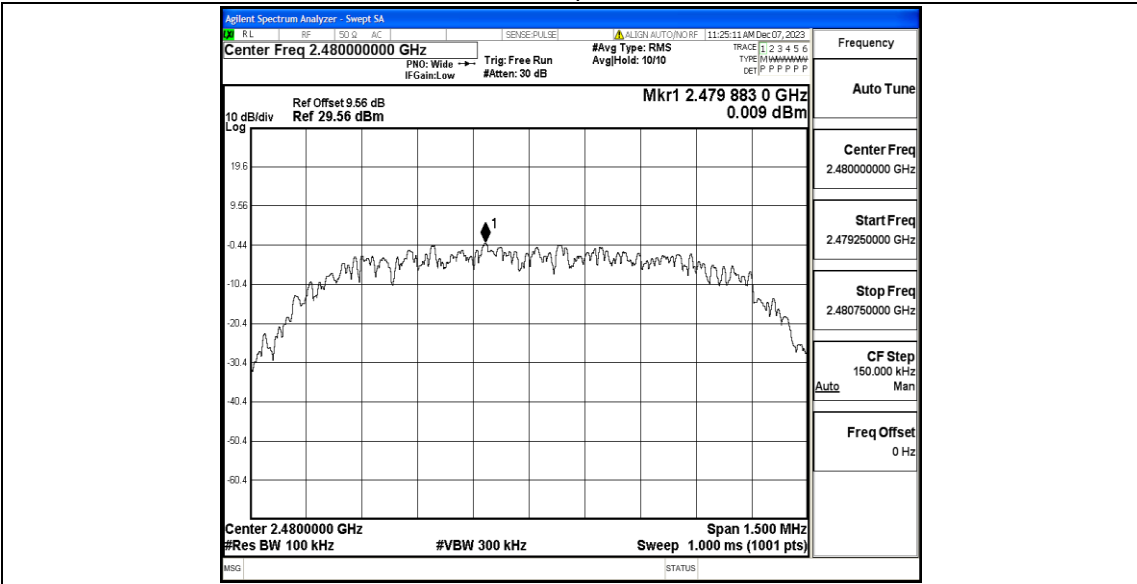
3DH5_Ant1_2441_30~1000



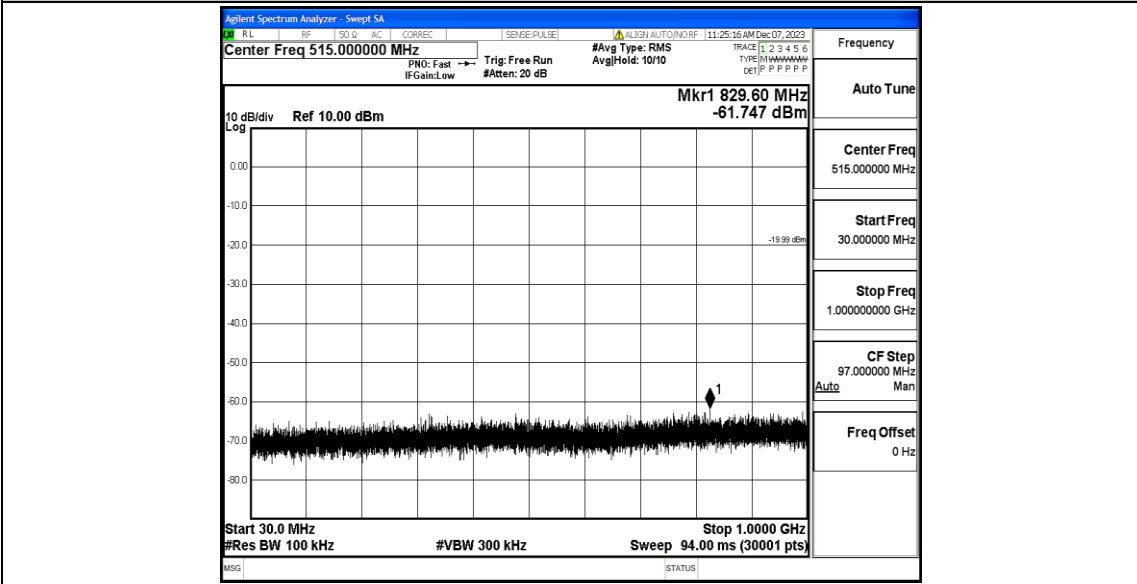
3DH5_Ant1_2441_1000~26500



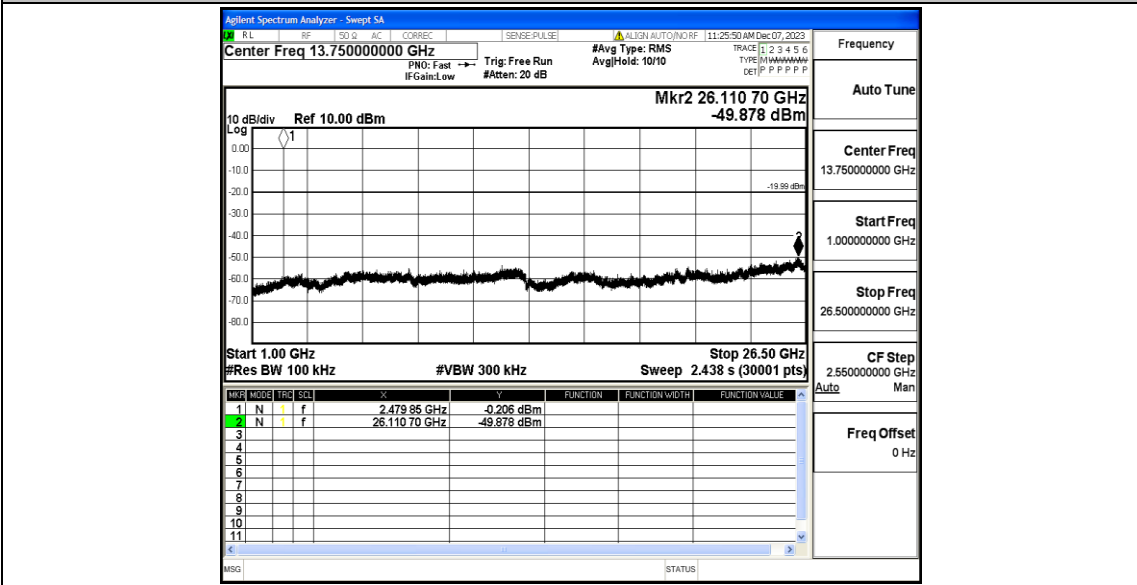
3DH5_Ant1_2480_0~Reference



3DH5_Ant1_2480_30~1000



3DH5_Ant1_2480_1000~26500

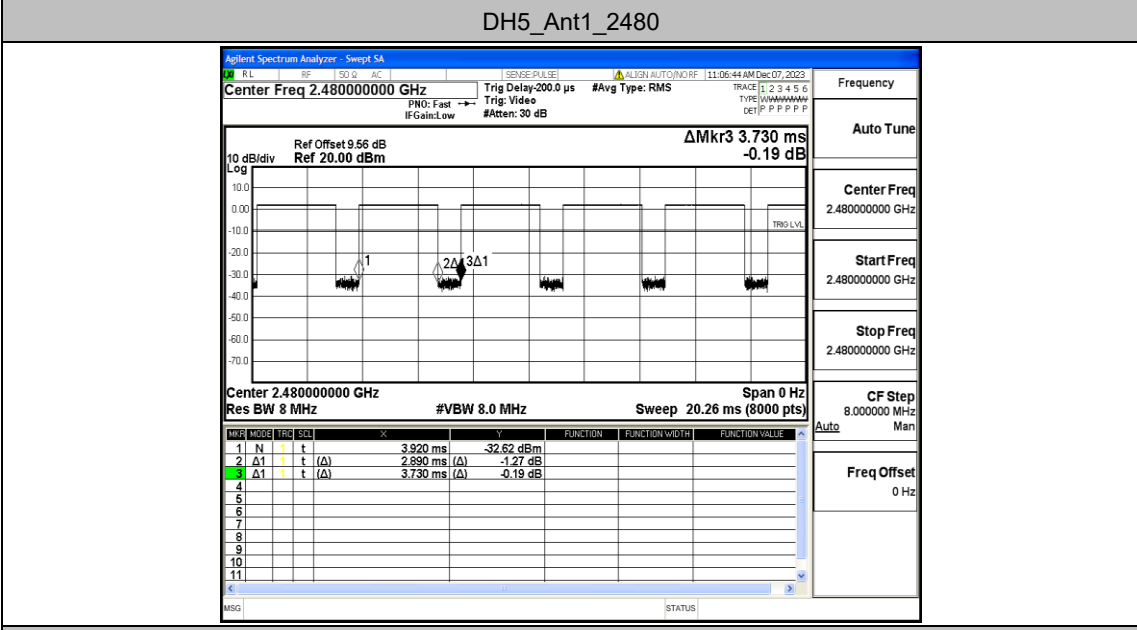
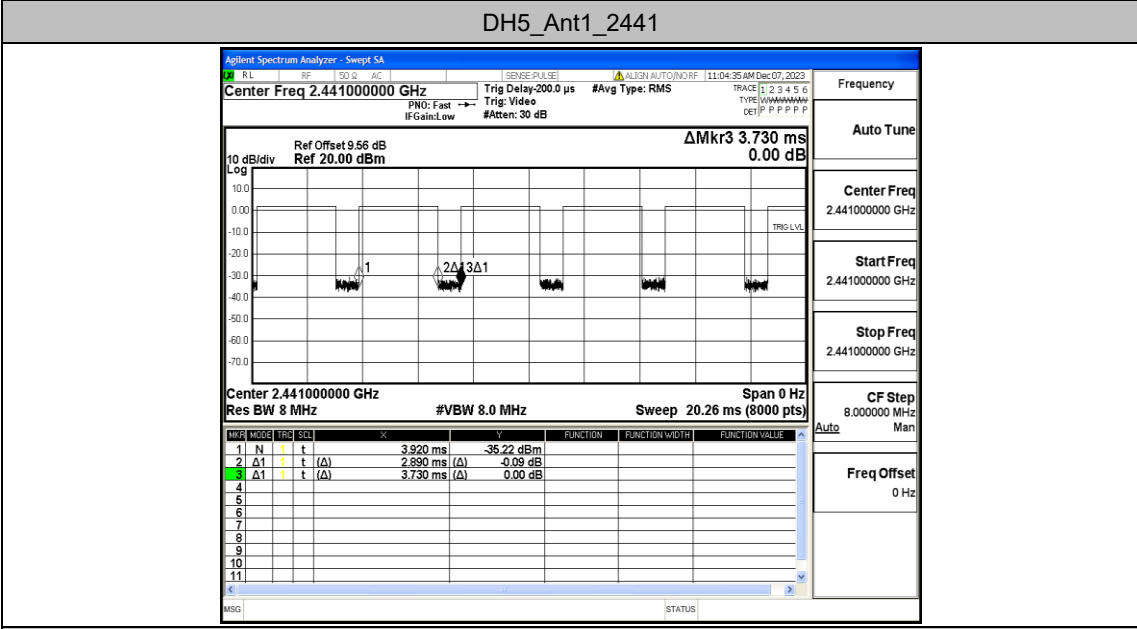
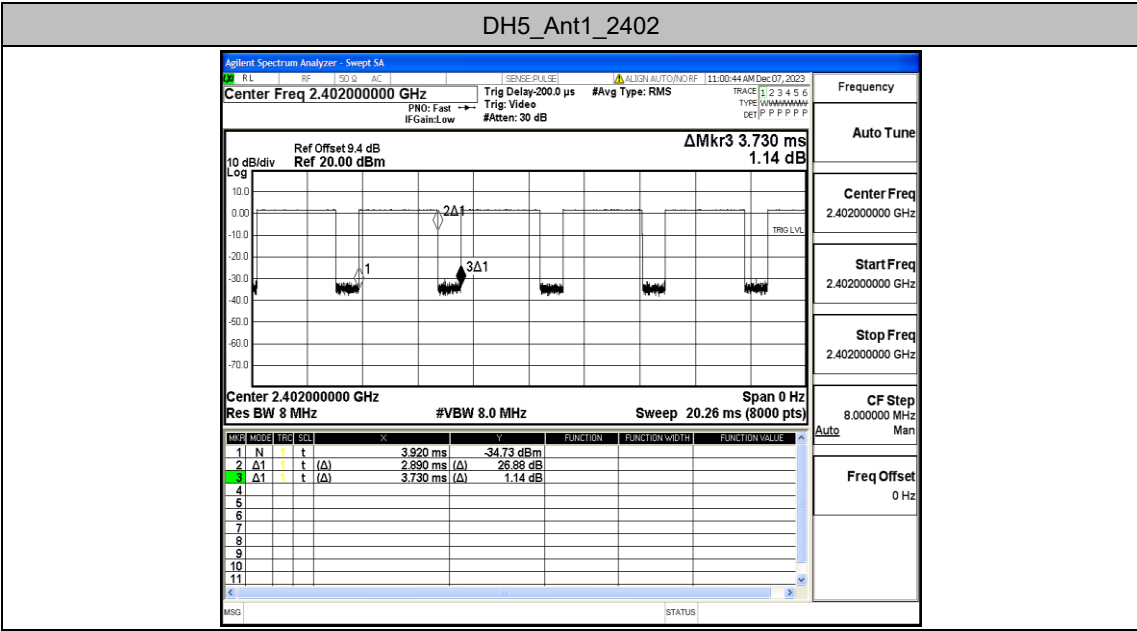


Appendix I: Duty Cycle

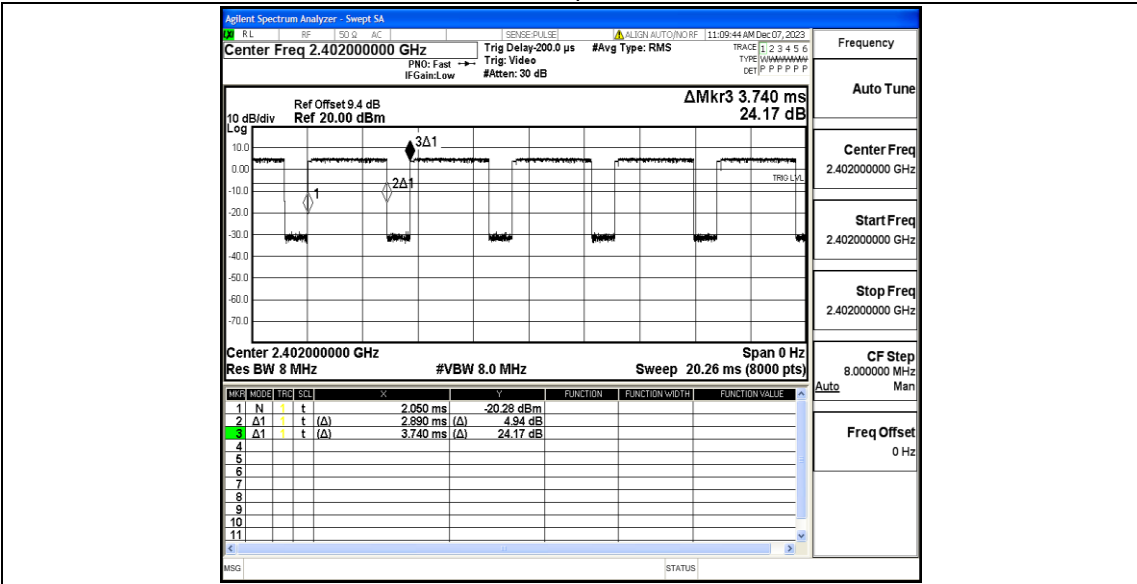
Test Result

TestMode	Antenna	Channel	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	1/T[kHz]
DH5	Ant1	2402	2.89	3.73	77.48	0.35
		2441	2.89	3.73	77.48	0.35
		2480	2.89	3.73	77.48	0.35
2DH5	Ant1	2402	2.89	3.74	77.27	0.35
		2441	2.89	3.74	77.27	0.35
		2480	2.88	3.73	77.21	0.35
3DH5	Ant1	2402	2.89	3.73	77.48	0.35
		2441	2.89	3.73	77.48	0.35
		2480	2.89	3.74	77.27	0.35

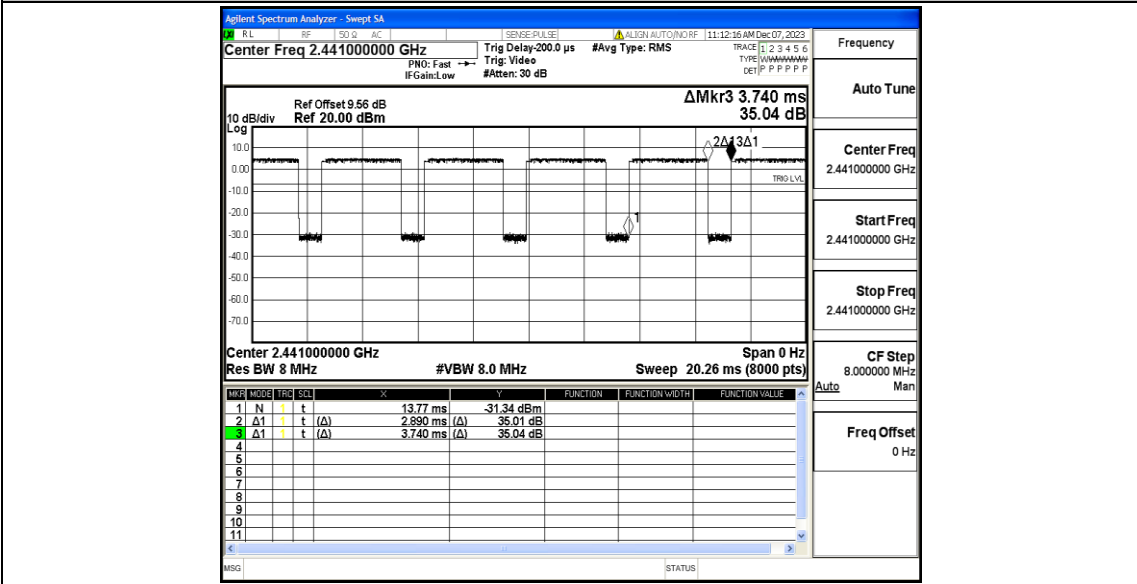
Test Graphs



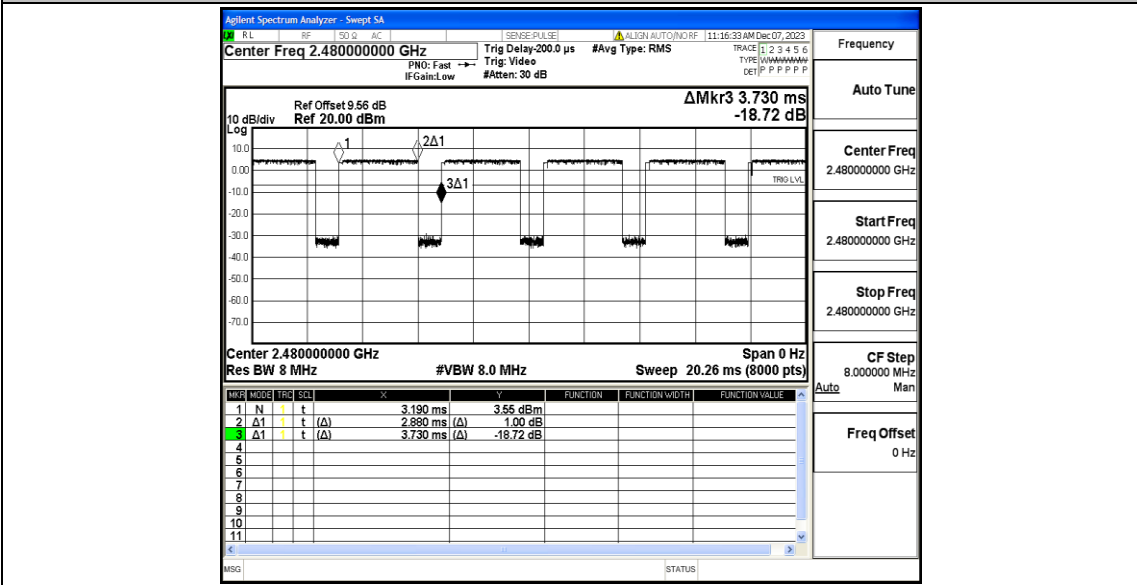
2DH5_Ant1_2402



2DH5_Ant1_2441



2DH5_Ant1_2480



3DH5_Ant1_2402